

RZ2xx

RZ3xx

SERIES

TECHNICAL MANUAL

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RISO INTERNATIONAL GROUP

RISO KAGAKU CORPORATION (JAPAN)
RISO, INC. (U.S.A.)
RISO EUROPE LIMITED (U.K.)
RISO HONG KONG (HONG KONG)
RISO UK (U.K.)
RISO THAILAND LIMITED (THAILAND)
RISO KOREA LIMITED (KOREA)

RISO DEUTSCHLAND GMBH (GERMANY)
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INDEX

- CHAPTER 1 : MAINTENANCE
- CHAPTER 2 : MACHINE SUMMARY
- CHAPTER 3 : MAIN DRIVE
- CHAPTER 4 : FIRST PAPER FEED SECTION
- CHAPTER 5 : SECOND PAPER FEED SECTION
- CHAPTER 6 : PRESS SECTION
- CHAPTER 7 : PAPER EJECTION SECTION
- CHAPTER 8 : PRINT DRUM SECTION
- CHAPTER 9 : CLAMP UNIT
- CHAPTER 10 : MASTER REMOVAL SECTION
- CHAPTER 11 : FB ORIGINAL SCANNING SECTION (RZ3 SERIES)
- CHAPTER 12 : FB ORIGINAL SCANNING SECTION (RZ2 SERIES)
- CHAPTER 13 : AF SCANNING SECTION
- CHAPTER 14 : MASTER MAKING SECTION
- CHAPTER 15 : OTHER PRECAUTIONS
- CHAPTER 16 : PANEL MESSAGES
- CHAPTER 17 : TEST MODE
- CHAPTER 18 : ELECTRICAL COMPONENTS
- CHAPTER 19 : WIRING DIAGRAM (RZ2 SERIES)
- CHAPTER 20 : WIRING DIAGRAM (RZ3 SERIES)

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CHAPTER 1: MAINTENANCE

Contents

Preface 1-2

Caution 1-3

Warning 1-4

1. Work Precautions 1-5

2. JIGs 1-8

3. Exterior Cover Removal 1-9

4. Opening the PCB bracket 1-13

Preface

This manual provides Technical Service Information for the **RISO PRINTER model RZ series**.

This manual provides procedures for removing and installing major components. Following these procedures will minimize machine malfunctions. This information and format will also increase technical representatives' awareness and experience regarding repairs necessary to insure end-user satisfaction.

CAUTION

[Handling of Lithium Battery]

- **Never fail to follow the following instructions when you discard the used lithium battery.**

1. Never let the battery short-circuited.

If the (+) and (-) terminals contact each other or metal materials, the battery will be short-circuited. If the batteries are collected and stored in disorderly or one upon another, the above-mentioned case will occur.

- DANGER -

If the battery is short-circuited, it will heat up and may in some cases explode into fire.

2. Never heat up the battery.

- DANGER -

If you heat the battery up to more than 100 degrees Celsius or put it into the fire, it may burn dangerously or explode.

3. Never disassemble the battery or press it into deformation.

- DANGER -

If you disassemble the battery, the gas pouring out of the inside may hurt your throat or the negative lithium may heat up into fire.

If the battery is pressed into deformation, the liquid inside may leak out of the sealed part or the battery may be short-circuited inside and explode.

4. Never fail to keep the battery out of reach of children.

If you put the battery within reach of children, they may swallow it down. Should they swallow the battery, immediately consult the doctor.

[Replacement of the Lithium Battery]

- 1. The lithium battery must be replaced by a trained and authorized service technician.**
- 2. The battery must be replaced only with the same or equivalent type recommended by the manufacturer.**
- 3. Discard used batteries according to the manufacturer's instructions.**

!! WARNING !!

Important Safety Precautions

1. Always disconnect electrical supply before placing hands in the machine.

I. To avoid injuries:

Be sure to disconnect the electrical power before disassembling, assembling, or when making adjustments on the machine.

II. Protection of the machine:

Make sure to turn OFF the power to the machine before plugging or unplugging the electrical connectors, or when connecting a Meter.

2. WARNING:

The back light tube of LCD of the Control Panel on this Model contains mercury which must be recycled or disposed of as hazardous waste.

3. Always connect electrical connectors firmly.

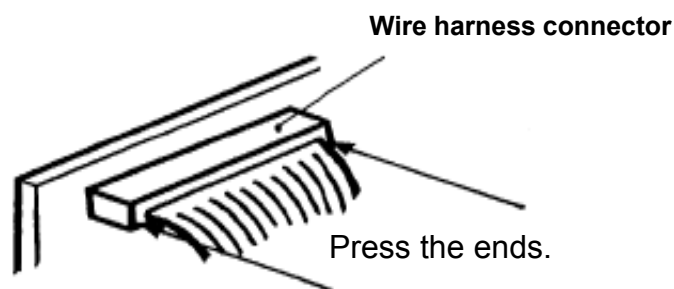
I. To avoid electrical failure:

The connectors must be connected firmly together and onto the PCBs.
Press on the ends of the connectors and then on the middle to ensure a firm fit.

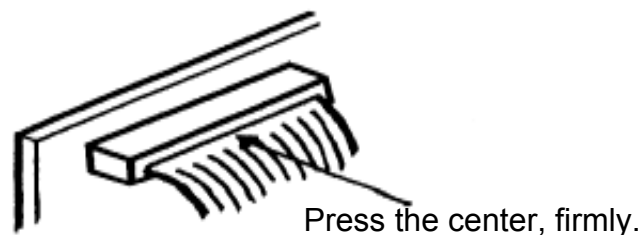
II. Protection of the electrical components:

The electrical components may be damaged due to short circuits caused by a loose connector.

FIRST



THEN



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1. Work Precautions

When conducting maintenance work, be careful to avoid injury caused by springs or the sharp edges of sheet metal.

Inspection

If you discover any defects or problems during an inspection, fix the problems or if necessary take steps such as replacing a part.

Removal

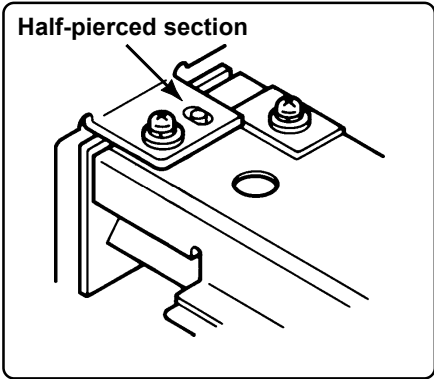
Check the problem area. At the same time, examine the cause of the problem and determine whether the part needs to be removed or disassembled. Next proceed according to the procedures presented in the Technical Manual. In cases where, for example, it is necessary to disassemble areas with large numbers of parts, parts which are similar to each other, or parts which are the same on the left and right, sort the parts so that you do not mix them up during reassembly.

- (1) Carefully sort the removed parts.
- (2) Distinguish between parts which are being replaced and those which will be reused.
- (3) When replacing screws, etc., be sure to use the specified sizes.

Assembly and Installation

Unless specified otherwise, perform the removal procedures in reverse during assembly and installation. In cases where protrusions or holes are provided to assist in positioning parts, use them for accurate positioning and securing.

(Protrusions and holes for positioning parts → Half pierced section)



0101

Tools

Using tools other than those specified can lead to injury or damage screws and parts. Have all the tools necessary for the work available.

[Standard Tool list]

Type	Tip size	Shaft length, etc.
Phillips screw driver	No. 2	(250 mm)
	No. 2	(100 mm–150 mm)
	No. 2	(stubby type)
	No. 1	(75 mm–100 mm)
Standard screw driver	6 mm	(100 mm–150 mm)
	3 mm	(100 mm–150 mm)
	1.8 mm	(precision type)
Nut driver (box driver)	8 mm	(100 mm–150 mm)
	7 mm	(100 mm–150 mm)
High frequency driver	2.5 mm	
Spanners	5 mm	5.5 mm 7 mm
	8 mm	10 mm 13 mm
		Monkey
Hex wrenches	5.0 mm	4.0 mm 3.0 mm
	2.5 mm	2.0 mm 1.5 mm
	(For 3.0mm, 2 pieces required)	

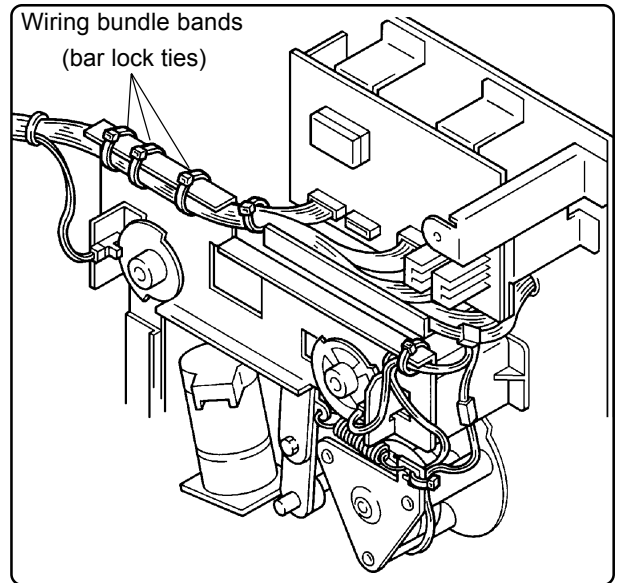
0102

Type	Remarks
Steel scale	150 mm
Feeler gauge	
Radial cutting pliers	
Pliers	
Nipper	
Small flashlight	
Multimeter	
Soldering iron	20 W–30 W
File	Flat, round

0103

Electrical system work

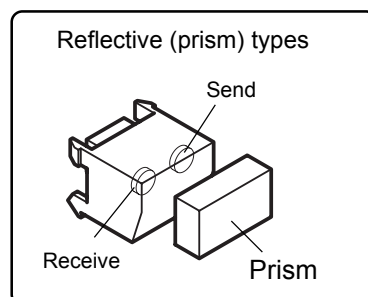
- After removing wire bundles, fasten them with wire bundle bands (bar lock ties) so that they will not sag.
- When installing parts, be careful to avoid pinching or damaging the wire bundles.
- If a fuse blows, always replace it with one with the specified capacity.
- Using a fuse with a larger capacity can not only damage parts, but may cause fires.
- Be careful not to drop image scanners, thermal print heads, and other sensors as they can be easily damaged.



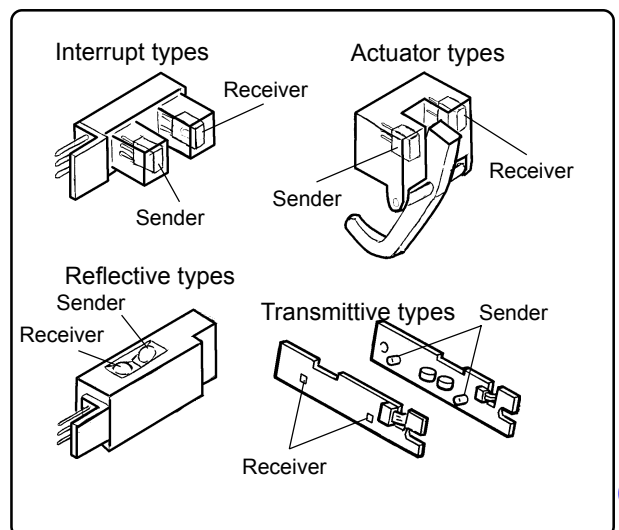
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Sensor types

- Photoelectric sensors may be broadly divided into the following four types: interrupt types (U-shaped), actuator types, reflective types, and transmittive types.
- Magnetic sensors use Hall ICs, which react to the magnetic force in magnets.
- Always turn off the power before plugging or unplugging sensor connectors.



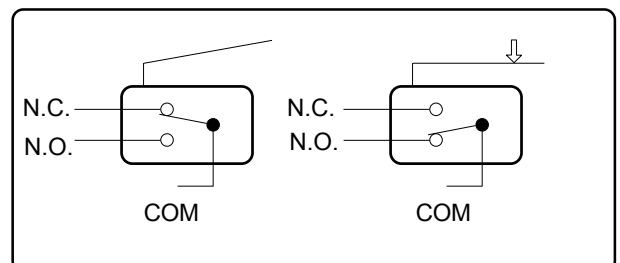
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Switch types

- Microswitches may be divided between normally open (N.O.) types and normally closed (N.C.) types. With an N.O. connection, an internal contact is connected when the switch actuator is pressed. With an N.C. connection, an internal contact is disconnected when the switch actuator is pressed.



0107

Note

The machine is comprised of many gears. When inspecting or replacing parts, apply grease to the gears. If they are not properly greased, the gears may make abnormal sounds, and malfunctions or mechanical problems may occur.

Installation location

Do not install the machine in any of the following locations.

- (1) Those subject to direct sunlight or any bright location such as by a window (If you must install in such a location, put a curtain or the like over the window.).
- (2) Those where the temperature changes drastically.
- (3) Those that are too hot, cold, humid, or dry.

RECOMMENDED:

Temperature range: 15 degrees Celsius - 30 degrees Celsius

Humidity range: 40% - 70% No condensation allowed

- (4) Those with radiant heat sources and any locations in the direct path of air from air conditioners or heaters.
- (5) Any poorly ventilated location.
- (6) Dusty atmosphere.
- (7) Any tilted location.

(Installation height difference: 10 mm max. front - rear, 10 mm max. left - right).

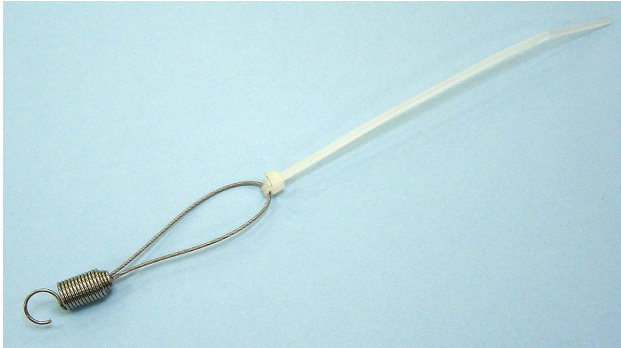
Electrical connection

- Plug the plug securely into the socket so that there is no problem with the contact in the power supply plug section.
- Do not use any triplets or extension cords.
- Do not allow any other machine to stand on or crush the power cord.

Ground connection

- Always ground this machine to prevent electrical shock in the unlikely event of electrical leakage.

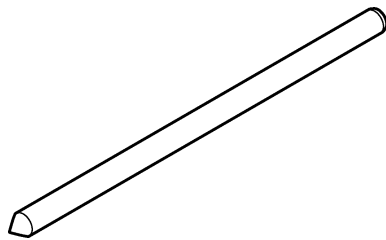
2. JIGs



0108

021-16007-005 Spring; Screen (2 pieces required)

Cut the ring end to make into hook, as shown on the photograph, and attach wire tie bar on the other end.



0109

016-16141-003 8mm Dia. x 160mm Shaft (JIG)

(2 pieces required)

Note:

The part numbers are subject to change without notice.

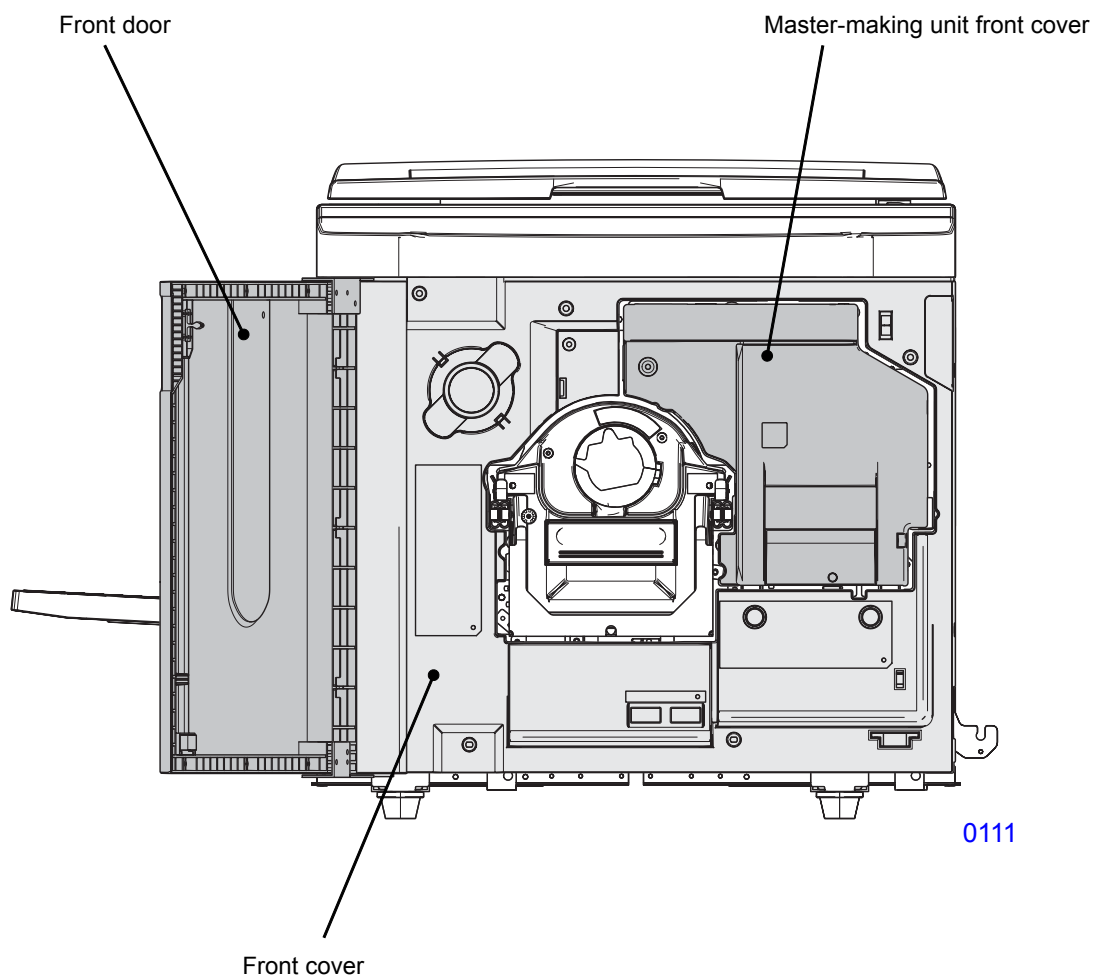
3. Exterior Cover Removal

Front cover

- (1) Open the front door, remove screws (M4x8: 5pcs).
- (2) Close the front door, remove screws (M4x8: 2pcs) on the paper feed side and screws (M4x8: 2pcs) on the paper ejection side, and then dismount the front cover together with the front door.

Master-making unit cover; front

- (1) With the machine power on, press the green release button to release the master-making unit and pull out the unit.
- (2) Remove screws (M4x8: 4 pcs) from the master-making unit front cover and remove the cover.



Stage cover

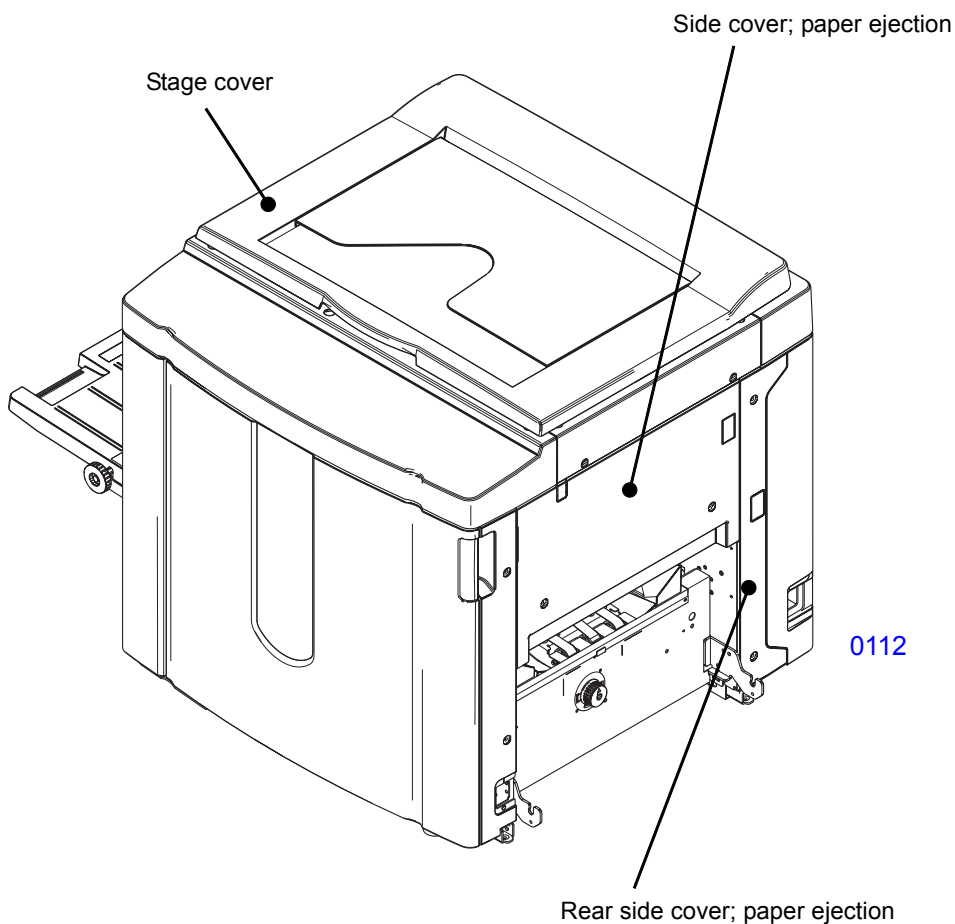
- (1) Open the stage cover, remove a screw (M4x10: 1pc each) from each of the two hinges (right and left) of the stage cover, and then attach those screws in the screw holes behind. Lift the stage cover off the machine.

Side cover; paper ejection

- (1) Remove screws (M4x8: 2pcs), and dismount the side cover;paper ejection.

Rear side cover; paper ejection

- (1) Remove the following covers.
 - Rear cover
 - Stage cover
 - Scanner rear cover
 - Scanner cover;paper ejection
- (2) Remove screws (M4x8: 2pcs), and dismount the rear side cover;paper ejection.



Rear cover

- Remove screws (M4x8: 4pcs), and dismount the rear cover.

Download cover

- Remove screws(M4x8: 2pcs), and dismount the download cover.

Side cover; paper feed

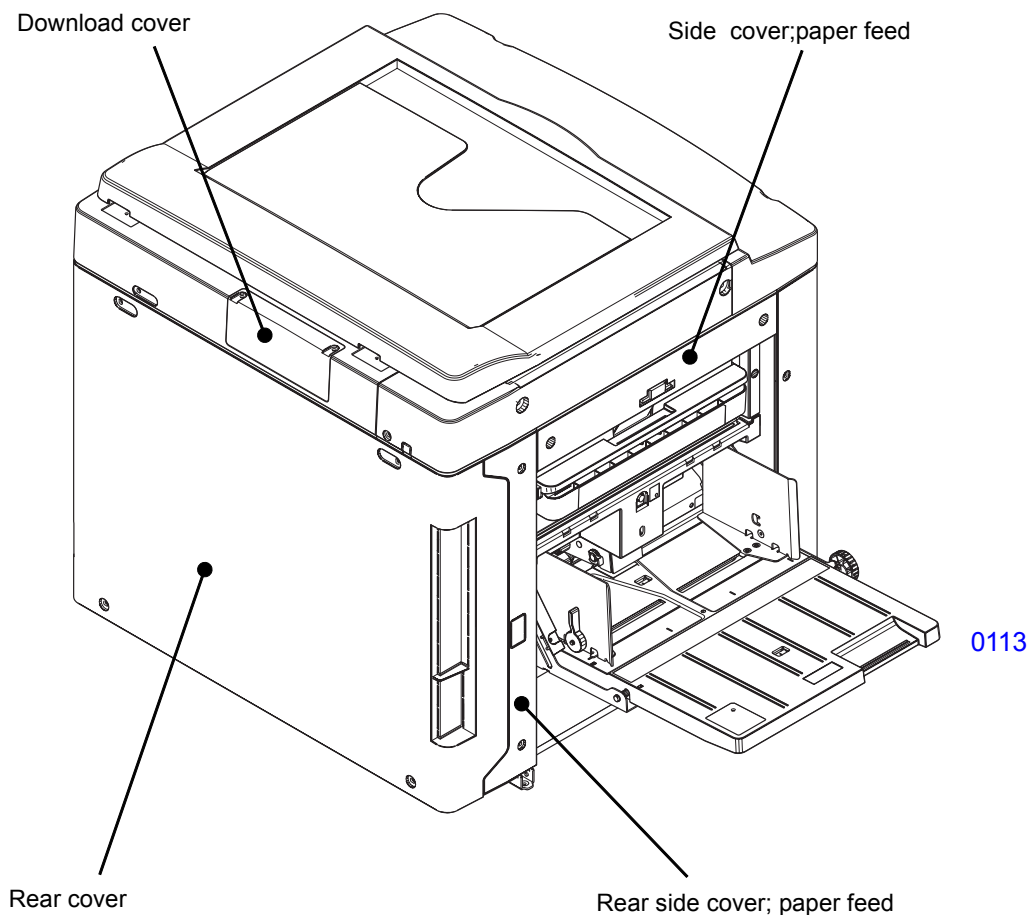
- Remove screws (M4x8: 2pcs), and dismount the side cover;paper feed.

Rear side cover; paper feed

- (1) Remove the following covers.

- Rear cover
- Scanner cover; paper feed

- (2) Remove screws (M4x8: 2pcs), and dismount the rear side cover;paper feed.



Scanner cover; paper feed

- Remove screws (M4x8: 3pcs), and dismount the scanner cover;paper feed.

Scanner cover; paper ejection

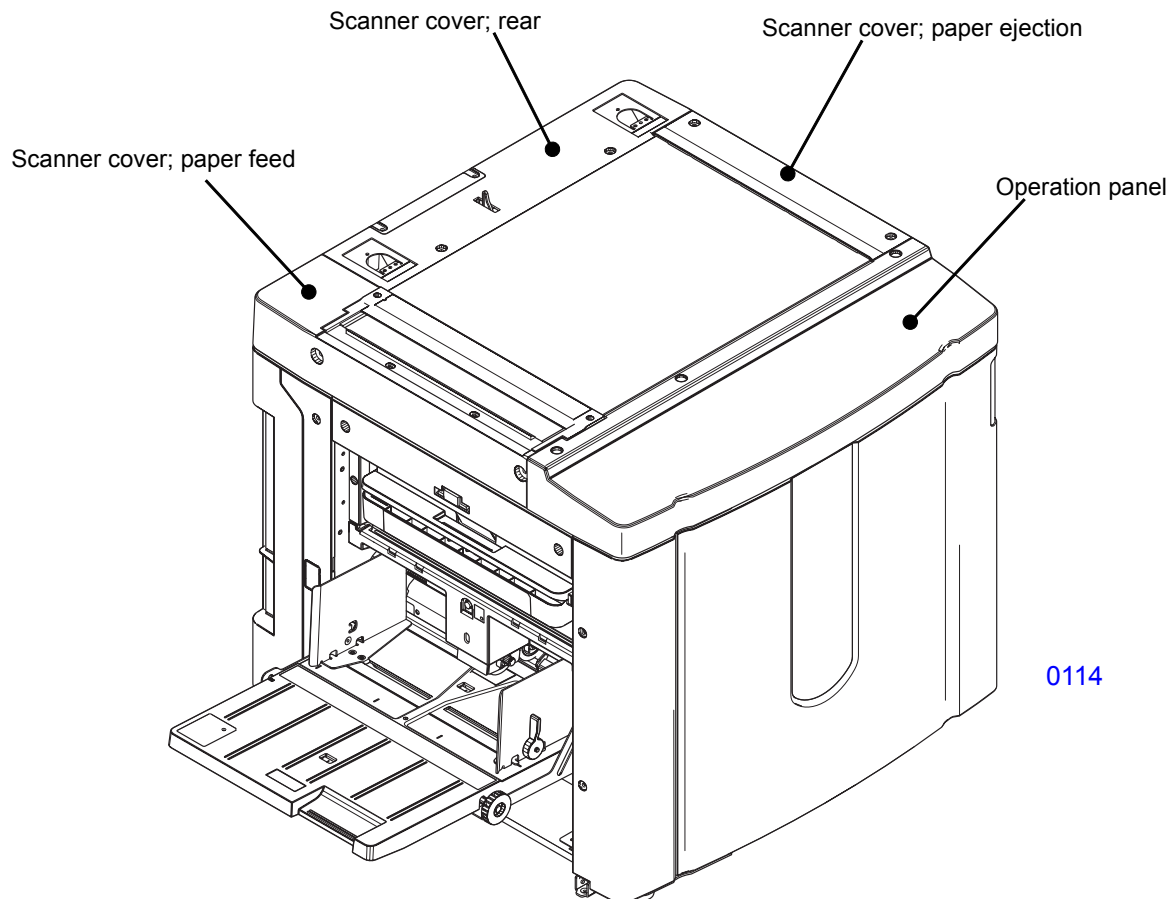
- Remove screws(M4x8: 4pcs), and dismount the scanner cover;paper ejection.

Scanner cover; rear

- (1) Dismount the stage cover.
- (2) Remove screws(M4x8: 3pcs), and dismount the scanner cover;rear.

Operation panel

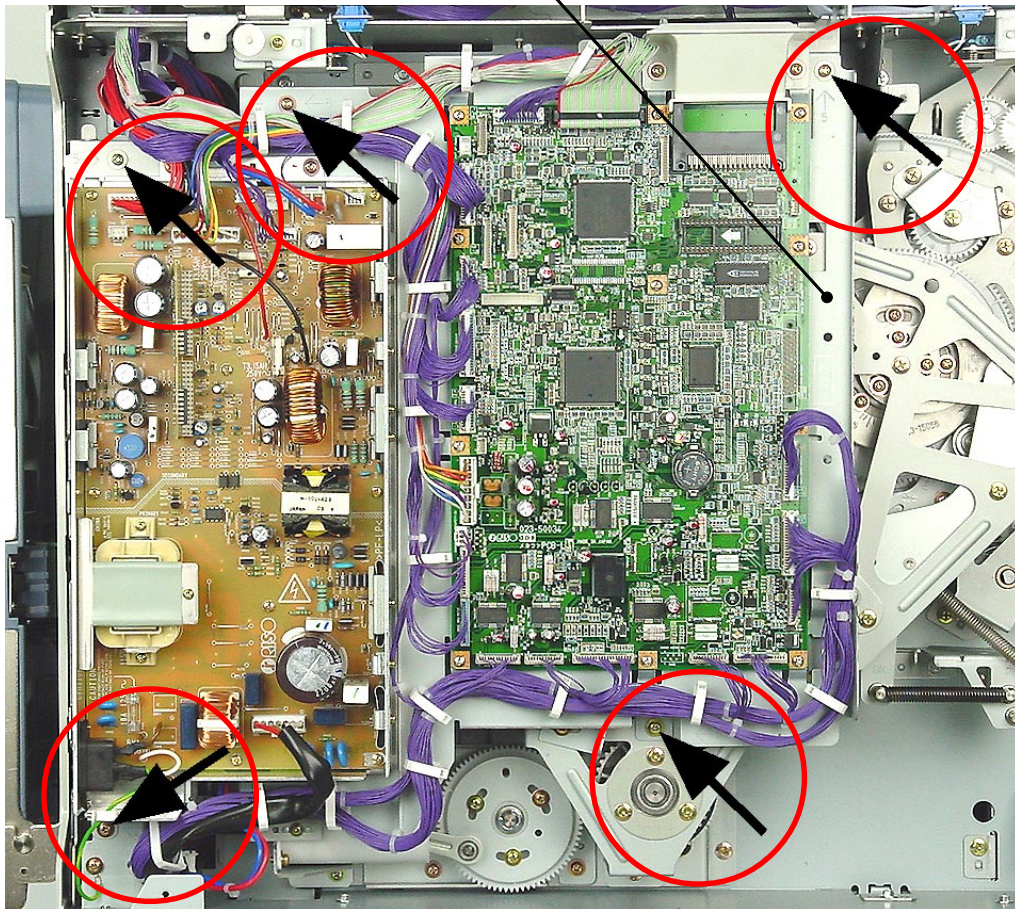
- (1) Remove screws (M4x8: 3pcs)
- (2) Lift up the operation panel after sliding to the front, unplug the connector, and then remove the operation panel.



4. Opening the PCB Bracket

- (1) Switch off the power, and dismount the rear cover.
- (2) Remove screws (M4x8: 5pcs) and slowly swing open the PCB bracket on which the power supply and mechanical control PCBs are mounted.

PCB bracket on which the power supply and mechanical control PCBs are mounted.



0115

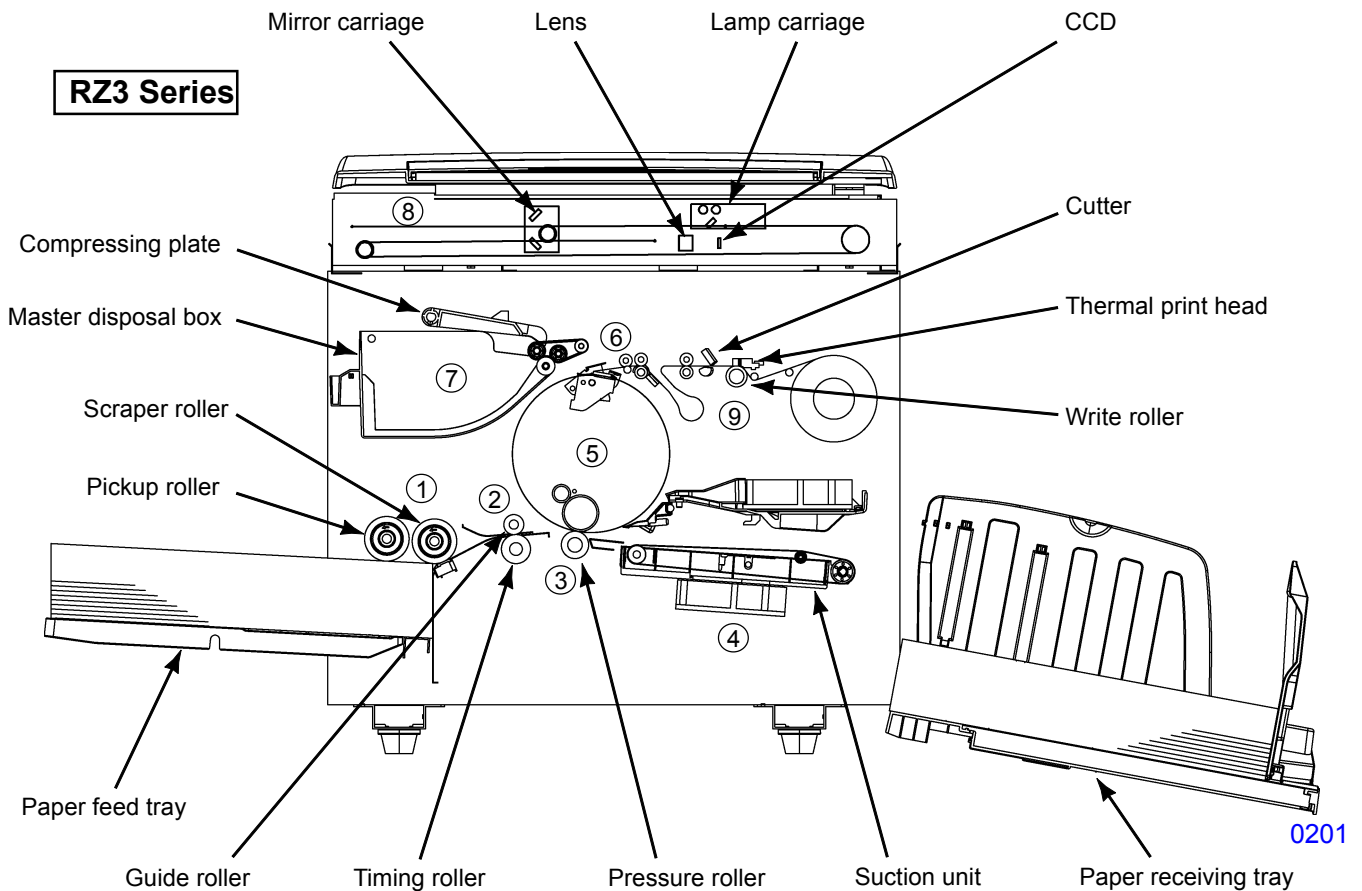
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CHAPTER 2: MACHINE SUMMARY

Contents

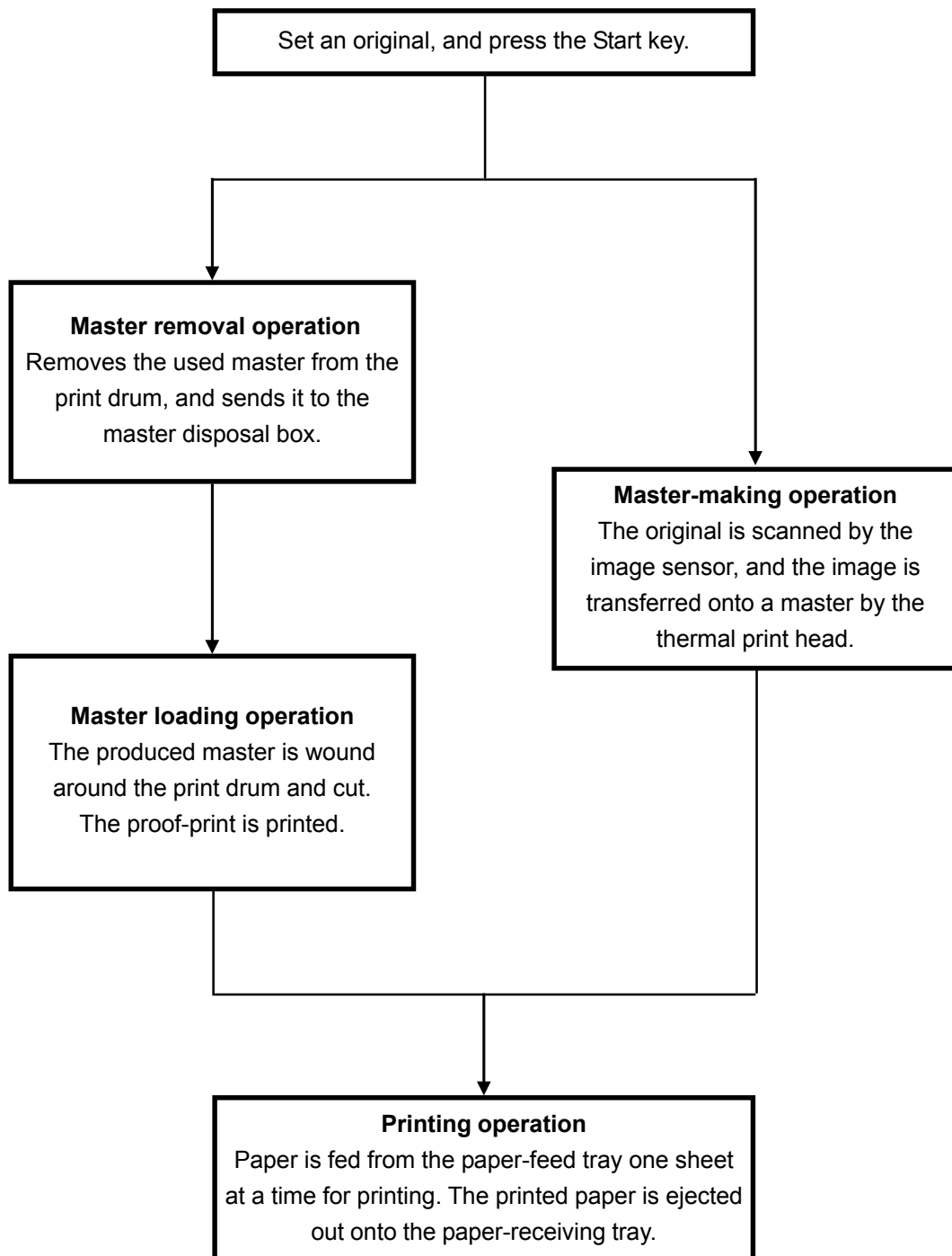
1. Cross-Sectional Diagram	2-2
2. Operation Outline	2-3
3. Outline of Paper-feeding, Printing and Paper-ejection Operations	2-4
4. Outline of Master-removal, Master-making and Master loading Operations	2-5
5. Optional Accessories (Excludes China Market Models)	2-6
6. Machine Specification (Excludes China Market Models)	2-7
RISO RZ 390 UI	2-7
RISO RZ 370 EP	2-8
RISO RZ 370 AW, AN	2-9
RISO RZ 310 UI	2-10
RISO RZ 300 EP	2-11
RISO RZ 230 EP	2-12
RISO RZ 230 AW, AN	2-13
RISO RZ 220 UI, AS	2-14
RISO RZ 200 EP	2-15
RISO RZ 200 AW	2-16
7. Feature List (Excludes China Market Models)	2-17
8. Optional Accessories (China Market Models only)	2-18
9. Machine Specification (China Market Models only)	2-19
RISO RZ 370 C	2-19
RISO RZ 230 C	2-20
10. Feature List (China Market Models only)	2-21

1. Cross-Sectional Diagram

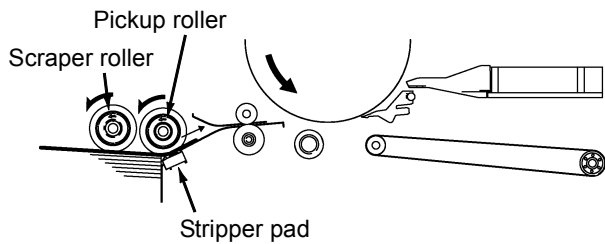


- ① First paper-feed area : Sends paper from the paper-feed tray one sheet at a time.
- ② Second paper-feed area : Stops the paper sent from the first paper-feed stage, and accurately feeds it to the print drum and pressure section.
- ③ Printing section : The pressure roller presses the paper firmly against the print drum for printing and feeding.
- ④ Paper-ejection section : Removes the printed paper from the print drum using the separator, and sends it to the paper-receiving tray.
- ⑤ Print cylinder (drum) : Supplies ink from the ink cartridge to the surface of the print drum for printing.
- ⑥ Clamp unit : Clamps the leading edge of a master.
- ⑦ Master-removal section : Peels the master from the print drum after use, and discharges it into the master disposal box.
- ⑧ Flatbed section : The lamp carriage and mirror carriage move, and the CCD unit scans the original on the scanner table.
- ⑨ Master-making section : Transports and creates a master using the thermal print head, then sends the produced master to the print drum, and cuts the master material.

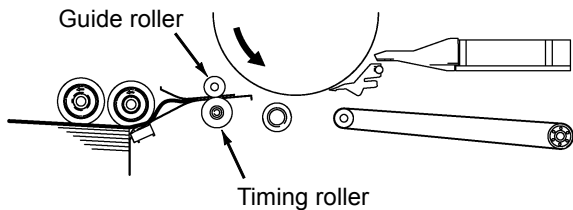
2. Operation Outline



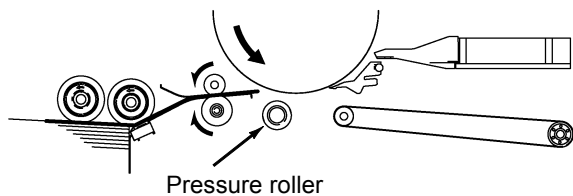
3. Outline of Paper-feeding, Printing, and Paper-ejection Operations



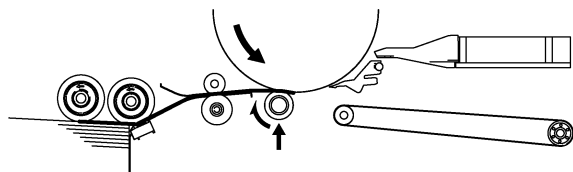
- (1) When the print drum rotates, the scraper roller and pickup roller also turn to feed paper. The stripper pad allows only one sheet to pass through to the second paper-feed area.



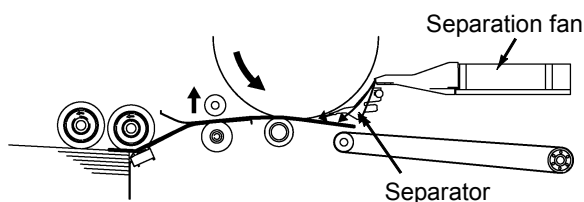
- (2) The paper sent from the first paper-feed area contacts the timing roller and guide roller, and stops temporarily. This causes slight buckling of the paper.



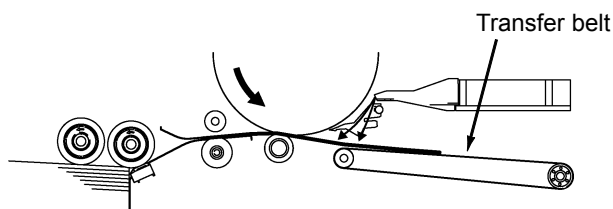
- (3) The timing roller and guide roller start rotating, feeding paper to the pressure section. (This operation is referred to as the "second paper-feed". To prevent tension from being placed on the end of the paper, the scraper roller and pickup roller are free to spin.)



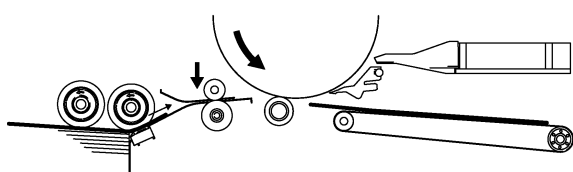
- (4) When the paper is fed further in from the second paper-feed area, the pressure roller rises to clamp the paper between the drum and pressure roller to start the printing operation.



- (5) The printed paper is removed from the print drum by the separator and separation fan. When the pressure roller rises, the guide roller also moves up to prevent tension from being placed on the tailing end of the paper.



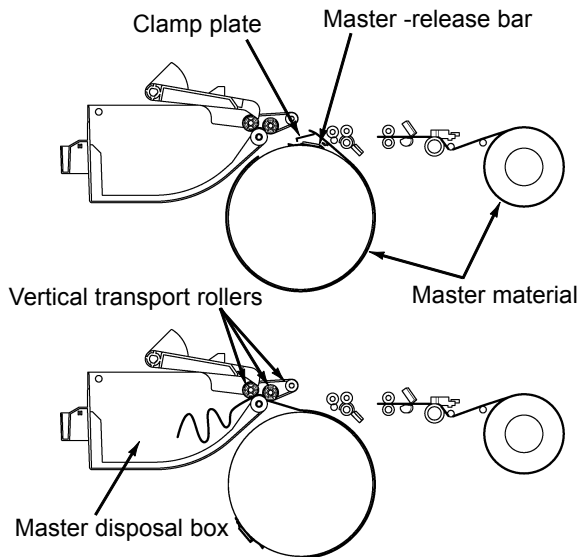
- (6) Then, the suction fan sucks in the air to keep the paper firmly on the transfer belts while the paper is carried to the paper-receiving tray.



- (7) The next sheet of paper is sent to the first paper-feed area, and the guide roller lowers.

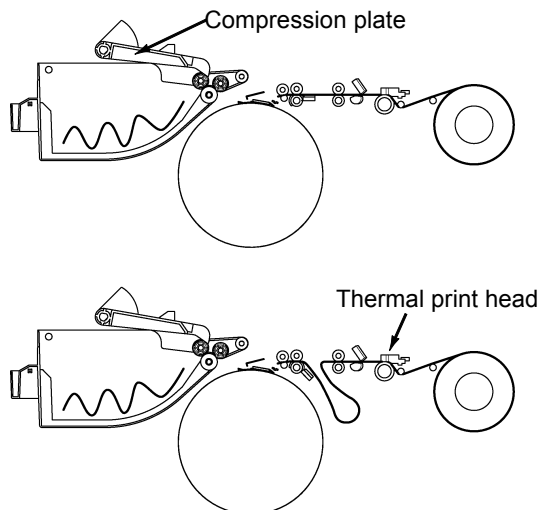
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4. Outline of Master-removal, Master-making, and Master-loading Operations



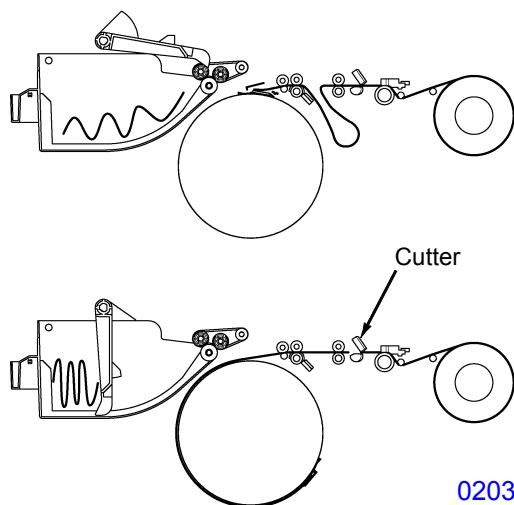
Master-removal operation

- (1) The clamp plate holding the leading edge of the master opens, and the master-release bar rises to lift the master out from under the clamp plate
- (2) The vertical transport rollers and print drum rotate, thereby separating the master from the print drum and sending it to the master disposal box.
- (3) The motion of the compression plate starts, pressing the master into the master disposal box.



Master-making operation

- (1) The image sensor scans the original, and the thermal print head transfers the image onto a master.



Master-loading operation

- (1) The leading edge of the master is sent to a the clamp plate on the print drum, and the leading edge is clamped.
- (2) The print drum rotates to wind the master around it.
- (3) The cutter cuts the master.

0203

5. Optional Accessories (Excludes China Market Models)

Optional Accessories

A variety of optional accessories are available to enhance the capabilities of the machine. For details about the optional accessories, see their respective user's manuals.

Color Cylinder(Drum)

A variety of colors are available, such as blue, red, green, and brown. Store a cylinder(drum) in its own case.

Auto Document Feeder AF-V

Feeds up to 50 sheets of originals automatically.

Job Separator IV:N

With the Programmed Printing function, allows the machine to print and sort into groups separated by tape.

Key Card Counter IV:N

With a single button press, shows the numbers of printed copies and consumed masters within a given period of time. This can help you manage costs.

Special Paper Feed Kit

Use for thick paper such as cards and envelopes. Replace with this unit when thick paper needs to pass through the machine.

Stand

Printer Control Board RISORINC3N

Use to connect a computer to the machine using a parallel cable.

RISO PRINTER Network Interface Card RISORINC-NET

Use to directly connect the machine to the network.

This comes with the RISO-MONITOR software that allows you to check the status of the machine from computers.

6. Machine Specification (Excludes China Market Models)

Specifications

RISO RZ390 UI

Master-making/printing methods	High-speed digital master-making/full automatic stencil printing
Original Type	Book (22lb(10 kg) or less), sheet
Original Size (max./min.)	When using the Stage Glass : 11 ⁵ / ₁₆ " 3 ⁹ / ₁₆ " (50mm 90mm) - 11 ¹¹ / ₁₆ " 17" (297mm 432mm) When using the ADF unit (option) : 3 ⁹ / ₁₆ " 5 ¹ / ₂ " (90mm 140mm) - 11 ¹¹ / ₁₆ " 17" (297mm 432mm)
Original Paper Weight	When using the Stage Glass : 22lb (10 kg) or less When using the ADF unit (option) : 15-lb bond (50g/m ²) - 28-lb bond (110g/m ²)
Print Paper Size (max./min.)	3 ¹⁵ / ₁₆ " 5 ¹³ / ₁₆ " (100mm 148mm) - 11 ¹¹ / ₁₆ " 17" (297mm 432mm)
Paper Supply Capacity	1000 sheets (17-lb bond (64g/m ²))
Print Paper Weight	13-lb bond (46g/m ²) - 110-lb index (210g/m ²)
Image Processing Mode	Line, Photo, Duo, Pencil
Resolution	D600dpi
Master-making Time	Approx. 16 seconds (for A4/landscape/100% reproduction ratio)
Printing Area (max.)	11 ¹ / ₈ " 16 ³ / ₄ " (283mm 425mm)
Print Reproduction Ratio	Zoom : 50 - 200% Standard reproduction ratio (enlargement) : 154%, 129%, 121% Standard reproduction ratio (reduction) : 94%, 78%, 65%, 61%
Print Speed	Approx. 60 - 130 sheets per minute (five steps variable)
Print Position Adjustment	Vertical : 1/2" (15mm) Horizontal : 3/8" (10mm)
Ink Supply	Full automatic (1000 ml per cartridge)
Master Supply/Disposal	Full automatic (approx. 215 sheets per roll)
Master Disposal Capacity	100 sheets
User Interface	LED panel with Progress Arrow indicators, front-side operation
Optional Accessories	Auto Document Feeder AF-V, Job Separator IV:N, Key Card Counter IV:N, Color Cylinder(Drum), Network Interface Card RISORINC-NET, Special Paper Feed Kit, Stand, Printer Control Board RISORINC3N
Power Source	RZ390UI : 120V AC, 60Hz <2.5A>
Dimensions	When in use : 54 ⁵ / ₁₆ "(W) 25 ³ / ₈ "(D) 26"(H) (1380mm(W) 645mm(D) 660mm(H)) When in storage : 30 ¹ / ₂ "(W) 25 ³ / ₈ "(D) 26"(H) (775mm(W) 645mm(D) 660mm(H))
Weight	Approx. 220lb (100 kg)

Note:

- The specifications are subject to change without prior notice.

RISO RZ370 EP

Master-making/printing methods	High-speed digital master-making/full automatic stencil printing
Original Type	Book (10 kg or less), sheet
Original Size (max./min.)	When using the Platen Glass : 50mm 90mm - 297mm 432mm When using the ADF unit (option) : 90mm 140mm - 297mm 432mm
Original Paper Weight	When using the Platen Glass : 10 kg or less When using the ADF unit (option) : 50g/m ² - 110g/m ²
Print Paper Size (max./min.)	100mm 148mm - 297mm 432mm
Paper Supply Capacity	1000 sheets (64 g/m ²)
Print Paper Weight	46g/m ² - 210g/m ²
Image Processing Mode	Line, Photo, Duo, Pencil
Resolution	D600dpi
Master-making Time	Approx. 16 seconds (for A4/landscape/100% reproduction ratio)
Printing Area (max.)	291mm 413mm
Print Reproduction Ratio	Zoom : 50 - 200% Standard reproduction ratio (enlargement) : 141%, 122%, 116% Standard reproduction ratio (reduction) : 94%, 87%, 82%, 71%
Print Speed	Approx. 60 - 130 sheets per minute (five steps variable)
Print Position Adjustment	Vertical : 15mm Horizontal : 10mm
Ink Supply	Full automatic (1000 ml per cartridge)
Master Supply/Disposal	Full automatic (approx. 220 sheets per roll)
Master Disposal Capacity	100 sheets
User Interface	LED panel with Progress Arrow indicators, front-side operation
Optional Accessories	Auto Document Feeder AF-V, Job Separator IV:N, Key Card Counter IV:N, Colour Drum, Network Interface Card RISORINC-NET, Special Paper Feed Kit, Stand, Printer Control Board RISORINC3N
Power Source	RZ370EP : 220V-240V AC, 50/60Hz <1.3A>
Dimensions	When in use : 1380mm(W) 645mm(D) 660mm(H) When in storage : 775mm(W) 645mm(D) 660mm(H)
Weight	Approx. 100 kg

Note:

- The specifications are subject to change without prior notice.

RISO RZ370 AW, AN

Master-making/printing methods	High-speed digital master-making/full automatic stencil printing
Original Type	Book (22lb(10 kg) or less), sheet
Original Size (max./min.)	When using the Stage Glass : 11 ⁵ / ₁₆ " 3 ⁹ / ₁₆ " (50mm 90mm) - 11 ¹¹ / ₁₆ " 17" (297mm 432mm) When using the ADF unit (option) : 3 ⁹ / ₁₆ " 5 ¹ / ₂ " (90mm 140mm) - 11 ¹¹ / ₁₆ " 17" (297mm 432mm)
Original Paper Weight	When using the Stage Glass : 22lb (10 kg) or less When using the ADF unit (option) : 15-lb bond (50g/m ²) - 28-lb bond (110g/m ²)
Print Paper Size (max./min.)	3 ¹⁵ / ₁₆ " 5 ¹³ / ₁₆ " (100mm 148mm) - 11 ¹¹ / ₁₆ " 17" (297mm 432mm)
Paper Supply Capacity	1000 sheets (17-lb bond (64 g/m ²))
Print Paper Weight	13-lb bond (46g/m ²) - 110-lb index (210g/m ²)
Image Processing Mode	Line, Photo, Duo, Pencil
Resolution	D600dpi
Master-making Time	Approx. 16 seconds (for A4/landscape/100% reproduction ratio)
Printing Area (max.)	11 ⁷ / ₁₆ " 16 ¹ / ₄ " (291mm 413mm)
Print Reproduction Ratio	Zoom : 50 - 200% Standard reproduction ratio (enlargement) : 141%, 122%, 116% Standard reproduction ratio (reduction) : 94%, 87%, 82%, 71%
Print Speed	Approx. 60 - 130 sheets per minute (five steps variable)
Print Position Adjustment	Vertical : 1/2" (15mm) Horizontal : 3/8" (10mm)
Ink Supply	Full automatic (1000 ml per cartridge)
Master Supply/Disposal	Full automatic (approx. 220 sheets per roll)
Master Disposal Capacity	100 sheets
User Interface	LED panel with Progress Arrow indicators, front-side operation
Optional Accessories	Auto Document Feeder AF-V, Job Separator IV:N, Key Card Counter IV:N, Color Cylinder(Drum), Network Interface Card RISORINC-NET, Special Paper Feed Kit, Stand, Printer Control Board RISORINC3N
Power Source	RZ370AW : 220V-240V AC, 50/60Hz <1.3A> RZ370AN : 110V AC, 60Hz <2.5A>
Dimensions	When in use : 54 ⁵ / ₁₆ "(W) 25 ³ / ₈ "(D) 26"(H) (1380mm(W) 645mm(D) 660mm(H)) When in storage : 30 ¹ / ₂ "(W) 25 ³ / ₈ "(D) 26"(H) (775mm(W) 645mm(D) 660mm(H))
Weight	Approx. 220lb (100 kg)

Note:

- The specifications are subject to change without prior notice.

RISO RZ310 UI

Master-making/printing methods	High-speed digital master-making/full automatic stencil printing
Original Type	Book (22lb(10 kg) or less), sheet
Original Size (max./min.)	When using the Stage Glass : 11 ⁵ / ₁₆ " 3 ⁹ / ₁₆ " (50mm 90mm) - 11 ¹¹ / ₁₆ " 17" (297mm 432mm) When using the ADF unit (option) : 3 ⁹ / ₁₆ " 5 ¹ / ₂ " (90mm 140mm) - 11 ¹¹ / ₁₆ " 17" (297mm 432mm)
Original Paper Weight	When using the Stage Glass : 22lb (10 kg) or less When using the ADF unit (option) : 15-lb bond (50g/m ²) - 28-lb bond (110g/m ²)
Print Paper Size (max./min.)	3 ¹⁵ / ₁₆ " 5 ¹³ / ₁₆ " (100mm 148mm) - 11 ¹¹ / ₁₆ " 17" (297mm 432mm)
Paper Supply Capacity	1000 sheets (17-lb bond (64g/m ²))
Print Paper Weight	13-lb bond (46g/m ²) - 110-lb index (210g/m ²)
Image Processing Mode	Line, Photo, Duo, Pencil
Resolution	D600dpi
Master-making Time	Approx. 22 seconds (for A4/portrait/100% reproduction ratio)
Printing Area (max.)	8 ¹ / ₄ " 11 ⁷ / ₁₆ " (210mm 290mm)
Print Reproduction Ratio	Standard reproduction ratio (enlargement) : 154%, 129%, 121% Standard reproduction ratio (reduction) : 94%, 78%, 65%, 61%
Print Speed	Approx. 60 - 130 sheets per minute (five steps variable)
Print Position Adjustment	Vertical : 1/2" (15mm) Horizontal : 3/8" (10mm)
Ink Supply	Full automatic (1000 ml per cartridge)
Master Supply/Disposal	Full automatic (approx. 295 sheets per roll)
Master Disposal Capacity	100 sheets
User Interface	LED panel with Progress Arrow indicators, front-side operation
Optional Accessories	Auto Document Feeder AF-V, Job Separator IV:N, Key Card Counter IV:N, Color Cylinder(Drum), Network Interface Card RISORINC-NET, Special Paper Feed Kit, Stand, Printer Control Board RISORINC3N
Power Source	RZ310UI : 120V AC, 60Hz <2.5A>
Dimensions	When in use : 54 ⁵ / ₁₆ "(W) 25 ³ / ₈ "(D) 26"(H) (1380mm(W) 645mm(D) 660mm(H)) When in storage : 30 ¹ / ₂ "(W) 25 ³ / ₈ "(D) 26"(H) (775mm(W) 645mm(D) 660mm(H))
Weight	Approx. 220lb (100 kg)

Note:

- The specifications are subject to change without prior notice.

RISO RZ300 EP

Master-making/printing methods	High-speed digital master-making/full automatic stencil printing
Original Type	Book (10 kg or less), sheet
Original Size (max./min.)	When using the Platen Glass : 50mm 90mm - 297mm 432mm When using the ADF unit (option) : 90mm 140mm - 297mm 432mm
Original Paper Weight	When using the Platen Glass : 10 kg or less When using the ADF unit (option) : 50g/m ² - 110g/m ²
Print Paper Size (max./min.)	100mm 148mm - 297mm 432mm
Paper Supply Capacity	1000 sheets (64g/m ²)
Print Paper Weight	46g/m ² - 210g/m ²
Image Processing Mode	Line, Photo, Duo, Pencil
Resolution	D600dpi
Master-making Time	Approx. 22 seconds (for A4/portrait/100% reproduction ratio)
Printing Area (max.)	210mm 290mm
Print Reproduction Ratio	Zoom : 50 - 200% Standard reproduction ratio (enlargement) : 141%, 122%, 116% Standard reproduction ratio (reduction) : 94%, 87%, 82%, 71%
Print Speed	Approx. 60 - 130 sheets per minute (five steps variable)
Print Position Adjustment	Vertical : 15mm Horizontal : 10mm
Ink Supply	Full automatic (1000 ml per cartridge)
Master Supply/Disposal	Full automatic (approx. 295 sheets per roll)
Master Disposal Capacity	100 sheets
User Interface	LED panel with Progress Arrow indicators, front-side operation
Optional Accessories	Auto Document Feeder AF-V, Job Separator IV:N, Key Card Counter IV:N, Colour Drum, Network Interface Card RISORINC-NET, Special Paper Feed Kit, Stand, Printer Control Board RISORINC3N
Power Source	RZ300EP : 220V-240V AC, 50/60Hz <1.3A>
Dimensions	When in use : 1380mm(W) 645mm(D) 660mm(H) When in storage : 775mm(W) 645mm(D) 660mm(H)
Weight	Approx. 100 kg

Note:

- The specifications are subject to change without prior notice.

RISO RZ230 EP

Master-making/printing methods	High-speed digital master-making/full automatic stencil printing
Original Type	Book (10 kg or less), sheet
Original Size (max./min.)	When using the Platen Glass : 50mm 90mm - 257mm 364mm When using the ADF unit (option) : 90mm 140mm - 257mm 364mm
Original Paper Weight	When using the Platen Glass : 10kg or less When using the ADF unit (option) : 50g/m ² - 110g/m ²
Print Paper Size (max./min.)	100mm 148mm - 297mm 432mm
Paper Supply Capacity	1000 sheets (64g/m ²)
Print Paper Weight	46g/m ² - 157g/m ²
Image Processing Mode	Line, Photo, Duo
Resolution	300dpi
Master-making Time	Approx. 25 seconds (for A4/portrait/100% reproduction ratio)
Printing Area (max.)	251mm 357mm
Print Reproduction Ratio	Standard reproduction ratio (enlargement) : 141%, 122%, 116% Standard reproduction ratio (reduction) : 94%, 87%, 82%, 71%
Print Speed	Approx. 60 - 130 sheets per minute (five steps variable)
Print Position Adjustment	Vertical : 15mm Horizontal : 10mm
Ink Supply	Full automatic (1000 ml per cartridge)
Master Supply/Disposal	Full automatic (approx. 250 sheets per roll)
Master Disposal Capacity	100 sheets
User Interface	LED panel with Progress Arrow indicators, front-side operation
Optional Accessories	Auto Document Feeder AF-V, Job Separator IV:N, Key Card Counter IV:N, Colour Drum, Network Interface Card RISORINC-NET, Special Paper Feed Kit, Stand, Printer Control Board RISORINC3N
Power Source	RZ230EP : 220V-240V AC, 50/60Hz <1.3A>
Dimensions	When in use : 1380mm(W) 645mm(D) 660mm(H) When in storage : 775mm(W) 645mm(D) 660mm(H)
Weight	Approx. 95kg

Note:

- The specifications are subject to change without prior notice.

RISO RZ230 AW, AN

Master-making/printing methods	High-speed digital master-making/full automatic stencil printing
Original Type	Book (22lb(10 kg) or less), sheet
Original Size (max./min.)	When using the Stage Glass : 1 ¹⁵ / ₁₆ " 3 ⁹ / ₁₆ " (50mm 90mm) - 10 ¹ / ₈ " 14 ⁵ / ₁₆ " (257mm 364mm) When using the ADF unit (option) : 3 ⁹ / ₁₆ " 5 ¹ / ₂ " (90mm 140mm) - 10 ¹ / ₈ " 14 ⁵ / ₁₆ " (257mm 364mm)
Original Paper Weight	When using the Stage Glass : 22lb (10 kg) or less When using the ADF unit (option) : 15-lb bond (50g/m ²) - 28-lb bond (110g/m ²)
Print Paper Size (max./min.)	3 ¹⁵ / ₁₆ " 5 ¹³ / ₁₆ " (100mm 148mm) - 11 ¹¹ / ₁₆ " 17" (297mm 432mm)
Paper Supply Capacity	1000 sheets (17-lb bond (64g/m ²))
Print Paper Weight	13-lb bond (46g/m ²) - 87-lb index (157g/m ²)
Image Processing Mode	Line, Photo, Duo
Resolution	300dpi
Master-making Time	Approx. 25 seconds (for A4/portrait/100% reproduction ratio)
Printing Area (max.)	9 ⁷ / ₈ " 14 ¹ / ₁₆ " (251mm 357mm)
Print Reproduction Ratio	Standard reproduction ratio (enlargement) : 141%, 122%, 116% Standard reproduction ratio (reduction) : 94%, 87%, 82%, 71%
Print Speed	Approx. 60 - 130 sheets per minute (five steps variable)
Print Position Adjustment	Vertical : 1 ¹ / ₂ " (15mm) Horizontal : 3 ³ / ₈ " (10mm)
Ink Supply	Full automatic (1000 ml per cartridge)
Master Supply/Disposal	Full automatic (approx. 250 sheets per roll)
Master Disposal Capacity	100 sheets
User Interface	LED panel with Progress Arrow indicators, front-side operation
Optional Accessories	Auto Document Feeder AF-V, Job Separator IV:N, Key Card Counter IV:N, Color Cylinder(Drum), Network Interface Card RISORINC-NET, Special Paper Feed Kit, Stand, Printer Control Board RISORINC3N
Power Source	RZ230AW : 220V-240V AC, 50/60Hz <1.3A> RZ230AN : 110V AC, 60Hz <2.5A>
Dimensions	When in use : 54 ⁵ / ₁₆ "(W) 25 ³ / ₈ "(D) 26"(H) (1380mm(W) 645mm(D) 660mm(H)) When in storage : 30 ¹ / ₂ "(W) 25 ³ / ₈ "(D) 26"(H) (775mm(W) 645mm(D) 660mm(H))
Weight	Approx. 210lb (95 kg)

Note:

- The specifications are subject to change without prior notice.

RISO RZ220 UI, AS

Master-making/printing methods	High-speed digital master-making/full automatic stencil printing
Original Type	Book (22lb(10 kg) or less), sheet
Original Size (max./min.)	When using the Stage Glass : 1 ¹⁵ / ₁₆ " 3 ⁹ / ₁₆ " (50mm 90mm) - 10 ¹ / ₈ " 14 ⁵ / ₁₆ " (257mm 364mm) When using the ADF unit (option) : 3 ⁹ / ₁₆ " 5 ¹ / ₂ " (90mm 140mm) - 10 ¹ / ₈ " 14 ⁵ / ₁₆ " (257mm 364mm)
Original Paper Weight	When using the Stage Glass : 22lb (10 kg) or less When using the ADF unit (option) : 15-lb bond (50g/m ²) - 28-lb bond (110g/m ²)
Print Paper Size (max./min.)	3 ¹⁵ / ₁₆ " 5 ¹³ / ₁₆ " (100mm 148mm) - 11 ¹¹ / ₁₆ " 17" (297mm 432mm)
Paper Supply Capacity	1000 sheets (17-lb bond (64g/m ²))
Print Paper Weight	13-lb bond (46g/m ²) - 87-lb index (157g/m ²)
Image Processing Mode	Line, Photo, Duo
Resolution	300dpi
Master-making Time	Approx. 25 seconds (for A4/portrait/100% reproduction ratio)
Printing Area (max.)	8 ¹ / ₄ " 14 ¹ / ₁₆ " (210mm 357mm)
Print Reproduction Ratio	RZ220UI :Standard reproduction ratio (enlargement) : 154%, 129% Standard reproduction ratio (reduction) : 94%, 78%, 65% RZ220AS:Standard reproduction ratio (enlargement) : 141%, 122%, 116% Standard reproduction ratio (reduction) : 94%, 87%, 82%, 71%
Print Speed	Approx. 60 - 130 sheets per minute (five steps variable)
Print Position Adjustment	Vertical : 1/2" (15mm) Horizontal : 3/8" (10mm)
Ink Supply	Full automatic (1000 ml per cartridge)
Master Supply/Disposal	Full automatic (approx. 250 sheets per roll)
Master Disposal Capacity	100 sheets
User Interface	LED panel with Progress Arrow indicators, front-side operation
Optional Accessories	Auto Document Feeder AF-V, Job Separator IV:N, Key Card Counter IV:N, Color Cylinder(Drum), Network Interface Card RISORINC-NET, Special Paper Feed Kit, Stand, Printer Control Board RISORINC3N
Power Source	RZ220UI : 120V AC, 60Hz <2.5A> RZ220AS : 220V-240V AC, 50/60Hz <1.3A>
Dimensions	When in use : 54 ⁵ / ₁₆ "(W) 25 ³ / ₈ "(D) 26"(H) (1380mm(W) 645mm(D) 660mm(H)) When in storage : 30 ¹ / ₂ "(W) 25 ³ / ₈ "(D) 26"(H) (775mm(W) 645mm(D) 660mm(H))
Weight	Approx. 210lb (95 kg)

Note:

- The specifications are subject to change without prior notice.

RISO RZ200 EP

Master-making/printing methods	High-speed digital master-making/full automatic stencil printing
Original Type	Book (10 kg or less), sheet
Original Size (max./min.)	When using the Platen Glass : 50mm 90mm - 257mm 364mm When using the ADF unit (option) : 90mm 140mm - 257mm 364mm
Original Paper Weight	When using the Platen Glass : 10kg or less When using the ADF unit (option) : 50g/m ² - 110g/m ²
Print Paper Size (max./min.)	100mm 148mm - 297mm 432mm
Paper Supply Capacity	1000 sheets (64g/m ²)
Print Paper Weight	46g/m ² - 157g/m ²
Image Processing Mode	Line, Photo, Duo
Resolution	300dpi
Master-making Time	Approx. 25 seconds (for A4/portrait/100% reproduction ratio)
Printing Area (max.)	210mm 290mm
Print Reproduction Ratio	Standard reproduction ratio (enlargement) : 141%, 122%, 116% Standard reproduction ratio (reduction) : 94%, 87%, 82%, 71%
Print Speed	Approx. 60 - 130 sheets per minute (five steps variable)
Print Position Adjustment	Vertical : 15mm Horizontal : 10mm
Ink Supply	Full automatic (1000 ml per cartridge)
Master Supply/Disposal	Full automatic (approx. 295 sheets per roll)
Master Disposal Capacity	100 sheets
User Interface	LED panel with Progress Arrow indicators, front-side operation
Optional Accessories	Auto Document Feeder AF-V, Job Separator IV:N, Key Card Counter IV:N, Colour Drum, Network Interface Card RISORINC-NET, Special Paper Feed Kit, Stand, Printer Control Board RISORINC3N
Power Source	RZ200EP : 220V-240V AC, 50/60Hz <1.3A>
Dimensions	When in use : 1380mm(W) 645mm(D) 660mm(H) When in storage : 775mm(W) 645mm(D) 660mm(H)
Weight	Approx. 95kg

Note:

- The specifications are subject to change without prior notice.

RISO RZ200 AW

Master-making/printing methods	High-speed digital master-making/full automatic stencil printing
Original Type	Book (22lb(10 kg) or less), sheet
Original Size (max./min.)	When using the Stage Glass : 1 ¹⁵ / ₁₆ " 3 ⁹ / ₁₆ " (50mm 90mm) - 10 ¹ / ₈ " 14 ⁵ / ₁₆ " (257mm 364mm) When using the ADF unit (option) : 3 ⁹ / ₁₆ " 5 ¹ / ₂ " (90mm 140mm) - 10 ¹ / ₈ " 14 ⁵ / ₁₆ " (257mm 364mm)
Original Paper Weight	When using the Stage Glass : 22lb (10 kg) or less When using the ADF unit (option) : 15-lb bond (50g/m ²) - 28-lb bond (110g/m ²)
Print Paper Size (max./min.)	3 ¹⁵ / ₁₆ " 5 ¹³ / ₁₆ " (100mm 148mm) - 11 ¹¹ / ₁₆ " 17" (297mm 432mm)
Paper Supply Capacity	1000 sheets (17-lb bond (64g/m ²))
Print Paper Weight	13-lb bond (46g/m ²) - 87-lb index (157g/m ²)
Image Processing Mode	Line, Photo, Duo
Resolution	300dpi
Master-making Time	Approx. 25 seconds (for A4/portrait/100% reproduction ratio)
Printing Area (max.)	8 ¹ / ₄ " 11 ⁷ / ₁₆ " (210mm 290mm)
Print Reproduction Ratio	Standard reproduction ratio (enlargement) : 141%, 122%, 116% Standard reproduction ratio (reduction) : 94%, 87%, 82%, 71%
Print Speed	Approx. 60 - 130 sheets per minute (five steps variable)
Print Position Adjustment	Vertical : 1/2" (15mm) Horizontal : 3/8" (10mm)
Ink Supply	Full automatic (1000 ml per cartridge)
Master Supply/Disposal	Full automatic (approx. 295 sheets per roll)
Master Disposal Capacity	100 sheets
User Interface	LED panel with Progress Arrow indicators, front-side operation
Optional Accessories	Auto Document Feeder AF-V, Job Separator IV:N, Key Card Counter IV:N, Color Cylinder(Drum), Network Interface Card RISORINC-NET, Special Paper Feed Kit, Stand, Printer Control Board RISORINC3N
Power Source	RZ200AW : 220V-240V AC, 50/60Hz <1.3A>
Dimensions	When in use : 54 ⁵ / ₁₆ "(W) 25 ³ / ₈ "(D) 26"(H) (1380mm(W) 645mm(D) 660mm(H)) When in storage : 30 ¹ / ₂ "(W) 25 ³ / ₈ "(D) 26"(H) (775mm(W) 645mm(D) 660mm(H))
Weight	Approx. 210lb (95 kg)

Note:

- The specifications are subject to change without prior notice.

7. Feature List (Excludes China Market Models)

Feature List

Feature	RZ390/RZ370/RZ310/RZ300	RZ230/RZ220/RZ200
Standard Reproduction Ratio	○	○
Zoom	○	NA
Dot process	○	NA
Scanning level (five manually variable steps)	○	○
Scanning level (auto)	○	NA
Book shadow edit	○	○
Programmed Printing	○	○
2-Up printing	○	○
Ink Saving	○	○
Pencil	○	NA
Custom Setting mode	○	○
Confidential mode	○	○
Auto idling	○	NA
Idling (manual)	○	○
Energy Saving mode	○	○
Auto-Process	○	○
Print speed	○	○
Print density	○	NA
Paper Jumping Wing Adjustment	○	NA
Paper Arranger	○	NA
Corrugator	NA	○
Link Print	Optional	NA

8. Optional Accessories (China Market Models only)

附录

选购附件

有各种各样的选购附件可用于增强本机功能。
如需有关选购附件的详细信息，请参阅对应的使用手册。

- **彩色滚筒**
有多种色彩可供选择，如蓝色、红色、绿色及棕色。滚筒应存放在自己的盒子中。
- **自动进稿机 AF-V**
可自动供给多达 50 张原稿。
- **分页机 IV:N**
使用编程印刷功能，可供本机进行印刷并以胶带分页成组。
- **磁卡计数器 IV:N**
只要按一个键，即可显示指定时间段内的印刷量与版纸消耗量。这有助于成本管理。
- **特殊进纸套件**
供卡片和信封等厚纸使用。需从本机通过厚纸时，请换上此机组。
- **撑脚**
- **打印机控制卡 RISORINC3N**
用于以并口线连接本机与计算机。
- **RISO 打印机网卡 RISORINC-NET**
用于直接将本机接入网络。
此附件附带 RISO-MONITOR 软件，可用于从计算机检查本机状态。

9. Machine Specification (China Market Models only)

技术规格

RISO RZ370C

制版 / 印刷方法	高速数字制版 / 全自动模版印刷
原稿类型	书本（10kg 或以下）、稿纸
原稿尺寸（最大 / 最小）	使用扫描台玻璃时：50mm × 90mm - 297mm × 432mm 使用自动进稿机组（选购件）时：90mm × 140mm - 297mm × 432mm
原稿重量	使用扫描台玻璃时：10kg 或以下 使用自动进稿机组（选购件）时：50g/m ² - 110g/m ²
印刷纸张尺寸（最大 / 最小）	100mm × 148mm - 297mm × 432mm
进纸容量	1000 张（64 g/m ² ）
印刷纸张重量	46g/m ² -210g/m ²
图像处理模式	文字、照片、图文、铅笔
分辨率	D600dpi
制版时间	约 16 秒（对于 A4/ 横向 /100% 缩放比率）
印刷区域（最大）	291mm×413mm
印刷缩放比率	任意指定：50 - 200% 标准缩放比率（放大）：141%, 122%, 116% 标准缩放比率（缩小）：94%, 87%, 82%, 71%
印刷速度	约每分钟 60 - 130 张（5 级速度调节）
印刷位置调整	垂直：±15mm，水平：±10mm
油墨供给	全自动（每筒 1000 毫升）
版纸供给 / 回收	全自动（约每卷 220 张）
废版盒容量	100 张
用户界面	带进度箭头指示灯的 LED 面板，正面操作
选购附件	自动进稿机 AF-V、分页机 IV：N、磁卡计数器 IV：N、彩色滚筒、网卡 RISORINC-NET、特殊进纸套件、撑脚以及打印机控制卡 RISORINC3N
电源	RZ370C：220V AC, 50Hz <1.3A>
尺寸	使用时：1380mm(W) × 645mm(D) × 660mm(H) 存储时：775mm(W) × 645mm(D) × 660mm(H)
重量	约 100 kg

注：

- 以上规格如果变更恕不另行通知。

RISO RZ230C

制版 / 印刷方法	高速数字制版 / 全自动模版印刷
原稿类型	书本（10kg 或以下）、稿纸
原稿尺寸（最大 / 最小）	使用扫描台玻璃时：50mm × 90mm - 257mm × 364mm 使用自动进稿机组（选购件）时：90mm × 140mm - 257mm × 364mm
原稿重量	使用扫描台玻璃时：10kg 或以下 使用自动进稿机组（选购件）时：50g/m ² - 110g/m ²
印刷纸张尺寸（最大 / 最小）	100mm × 148mm - 297mm × 432mm
进纸容量	1000 张（64g/m ² ）
印刷纸张重量	46g/m ² - 157g/m ²
图像处理模式	文字、照片、图文
分辨率	300dpi
制版时间	约 25 秒（对于 A4/ 纵向 /100% 缩放比率）
印刷区域（最大）	251mm×357mm
印刷缩放比率	标准缩放比率（放大）：141%, 122%, 116% 标准缩放比率（缩小）：94%, 87%, 82%, 71%
印刷速度	约每分钟 60 - 130 张（5 级速度调节）
印刷位置调整	垂直：±15mm，水平：±10mm
油墨供给	全自动（每筒 1000 毫升）
版纸供给 / 回收	全自动（约每卷 250 张）
废版盒容量	100 张
用户界面	带进度箭头指示灯的 LED 面板，正面操作
选购附件	自动进稿机 AF-V、分页机 IV：N、磁卡计数器 IV：N、彩色滚筒、网卡 RISOINC-NET、特殊进纸套件、撑脚以及打印机控制卡 RISOINC3N
电源	RZ230C：220V AC, 50Hz <1.3A>
尺寸	使用时：1380mm(W) × 645mm(D) × 660mm(H) 存储时：775mm(W) × 645mm(D) × 660mm(H)
重量	约 95kg

注：

- 以上规格如果变更恕不另行通知。

10. Feature List (China Market Models only)

功能清单

功能	RZ370C	RZ230C
标准缩放比率	○	○
任意指定	○	不适用
网点处理	○	不适用
扫描对比度（五级手动调节）	○	○
扫描对比度（自动）	○	不适用
书本阴影编辑	○	○
编程印刷	○	○
两张并排印刷	○	○
节约油墨	○	○
铅笔	○	不适用
自选设定模式	○	○
机密排版模式	○	○
自动均墨	○	不适用
均墨（手动）	○	○
节约能源模式	○	○
自动流程	○	○
印刷速度	○	○
印刷浓度	○	不适用
出纸导翼调整	○	不适用
压纸器	○	○
链接印刷	可选购	不适用

MEMO

CHAPTER 3: MAIN DRIVE

Contents

MECHANISM

- 1. Main Drive Section 3-2
- 2. Print Drum Angle Detection 3-3
- 3. Main Motor Safety Mechanism 3-4

DISASSEMBLY

- < Precautions to work safely on the drive area > 3-6
- 1. Removing the Pressure Spring 3-7
- 2. Removing the Main Belt 3-8
- 3. Removing the Main Motor Pulley Assembly 3-10
- 4. Removing the Main Shaft Assembly 3-11
- 5. Removing the Serviceman Safety SW 3-12

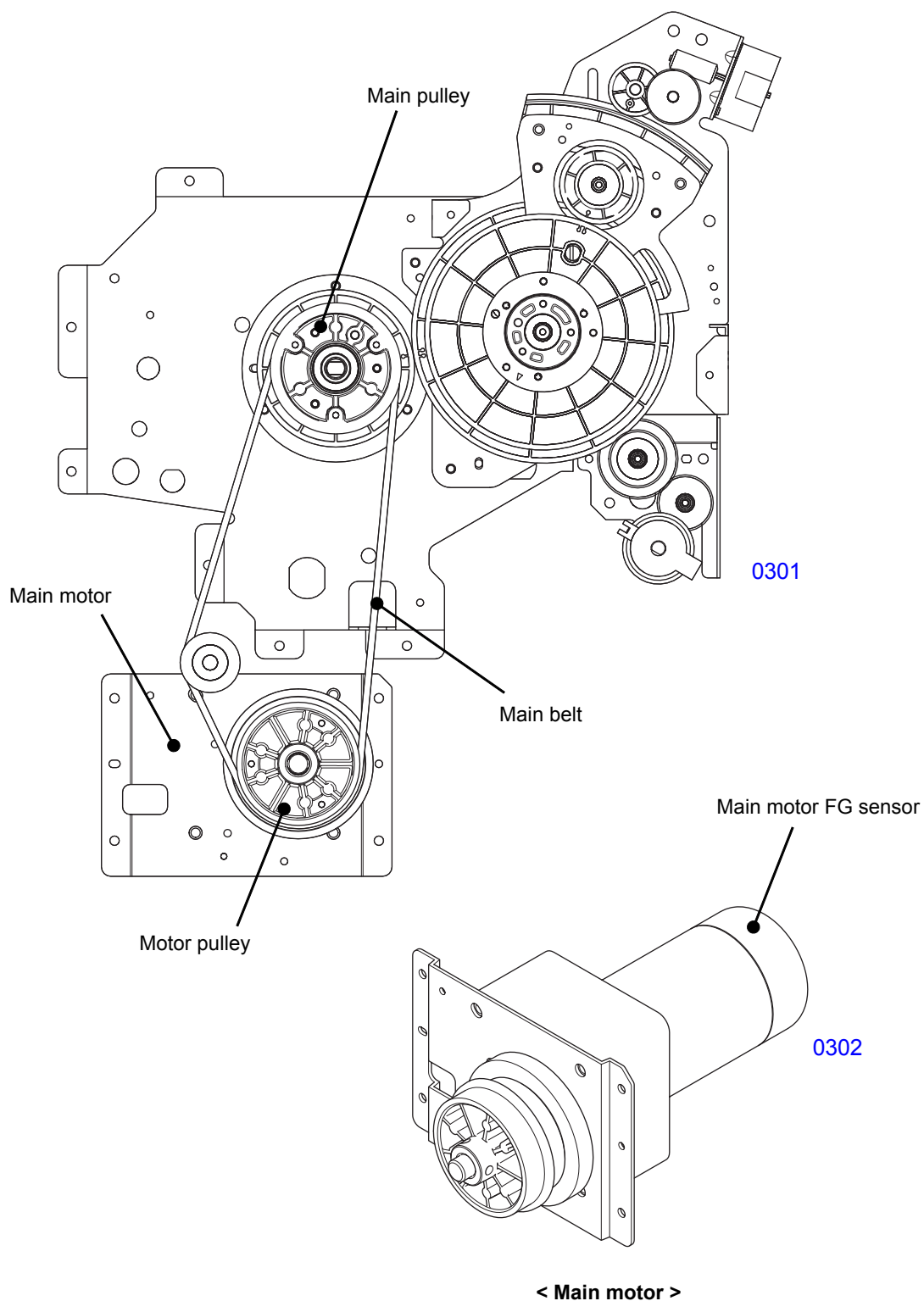
ADJUSTMENT

- 1. Print-Drum "Position-A" Adjustment 3-13
- 2. Print-Drum "Position-B" Stop Position Adjustment 3-13

Mechanism

1. Main Drive Mechanism

When the main motor is turned on, the motor pulley rotates and the rotation is transmitted to the main pulley by the main belt. The main motor FG sensor detects the speed and the angle position of the print drum.

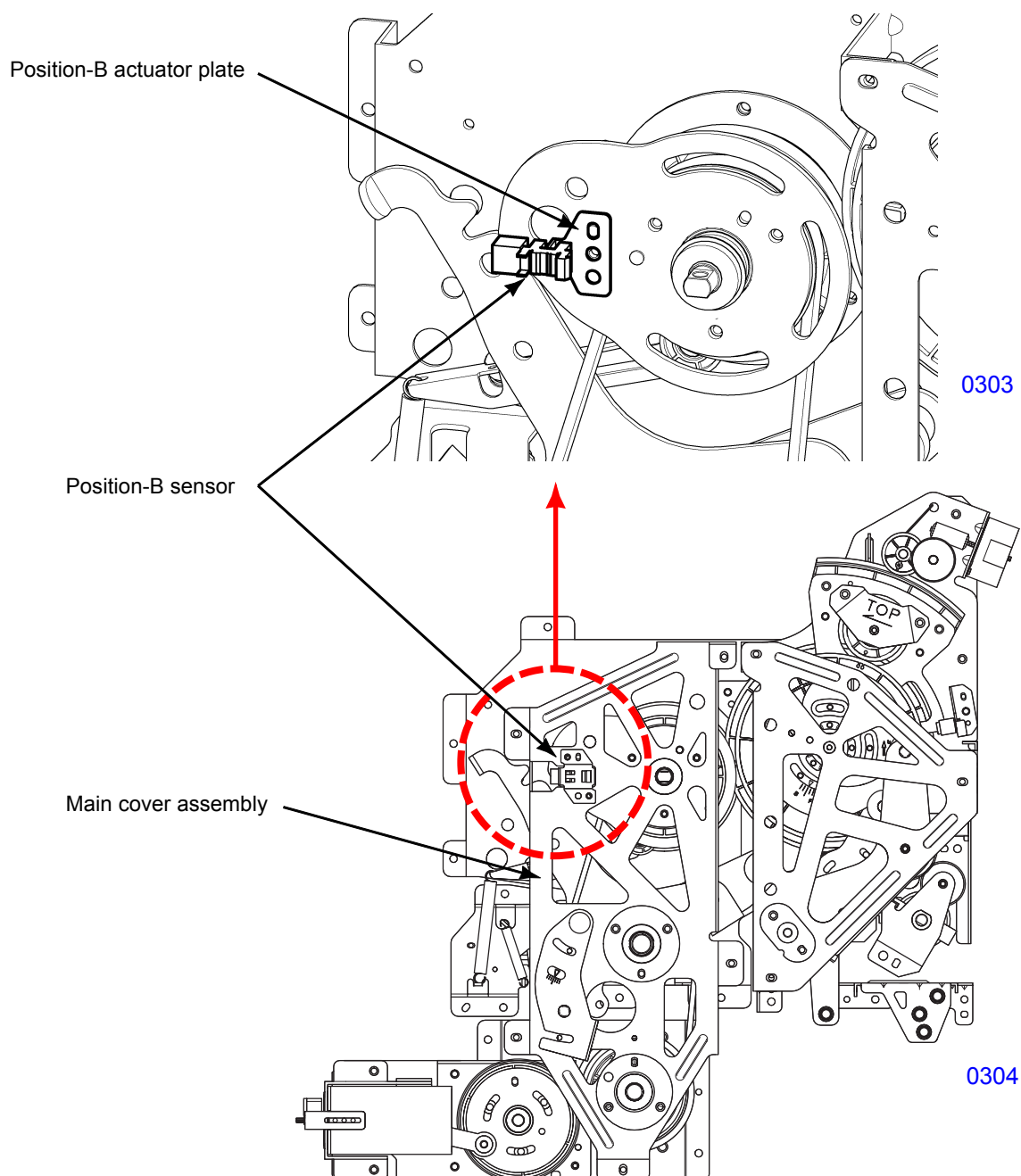


2. Print Drum Angle Detection

Print drum angles are calculated from the main motor FG sensor count by using following parts.

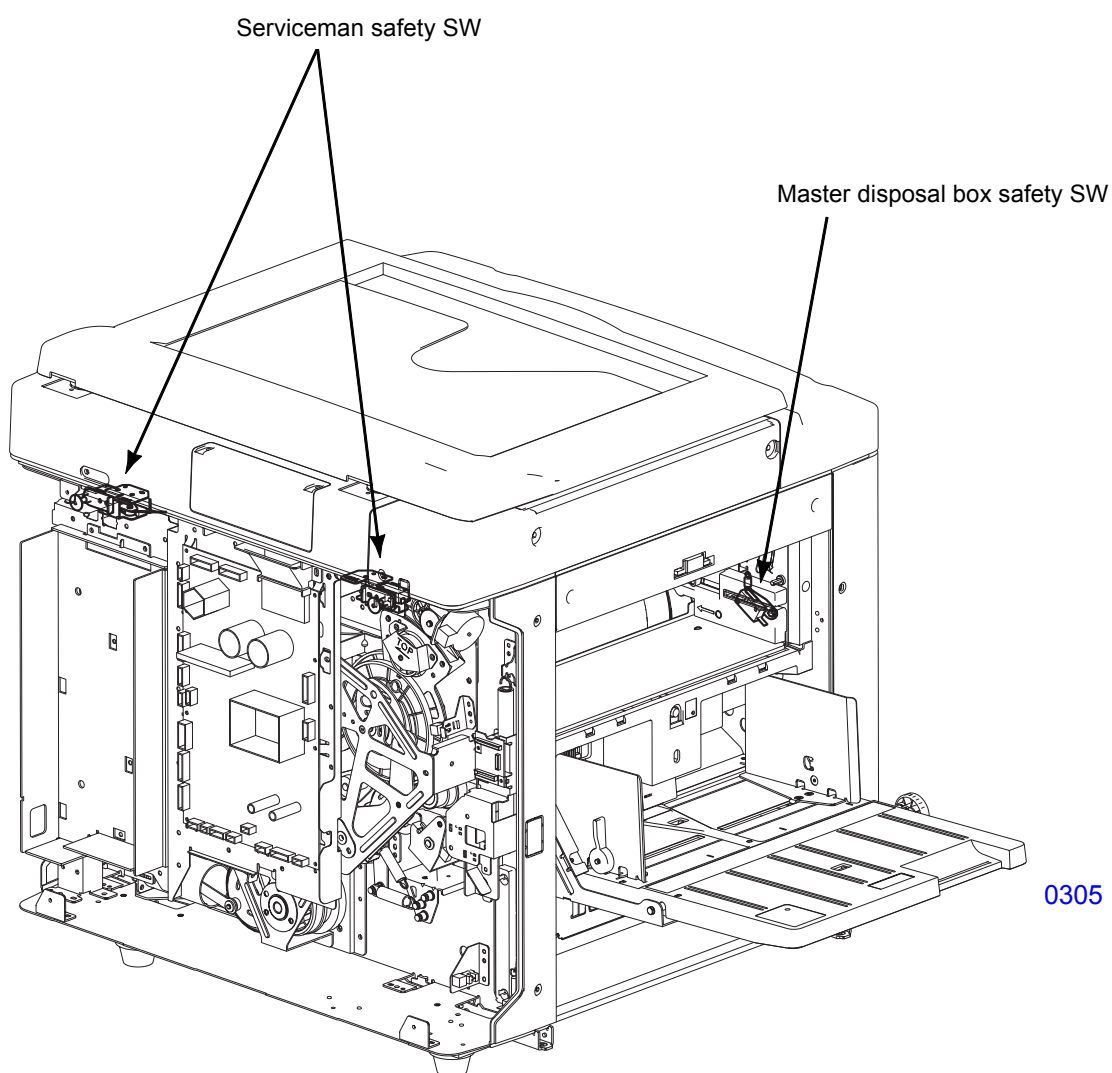
- Main motor FG sensor.
- Position-B sensor on the main cover assembly.
- Position-B actuator plate attached on the pressure cam.

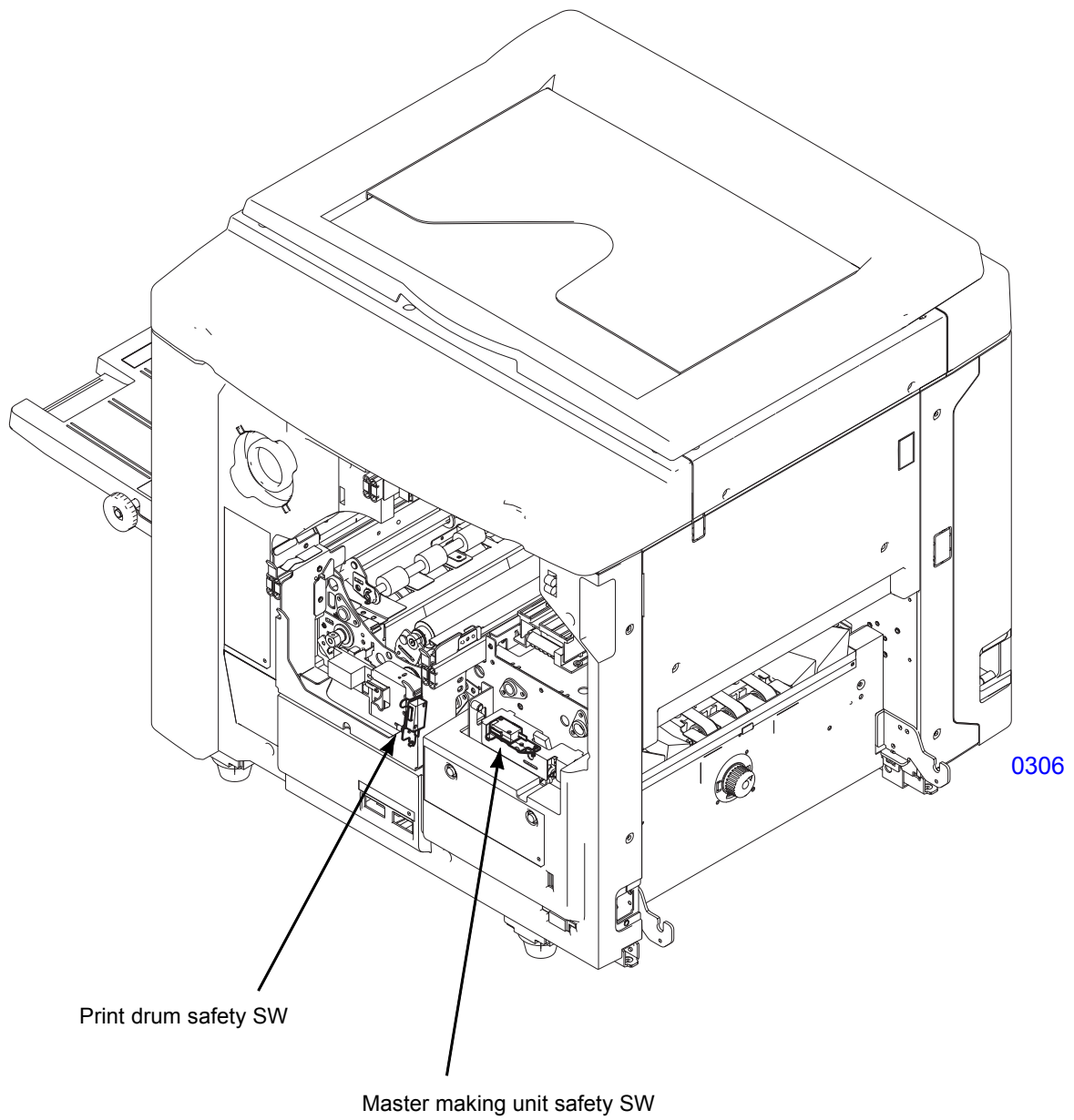
When the position-B actuator plate is detected by the position-B sensor, the print drum rotates for 4 degrees and the machine stops. This is where the center of the actuator plate is in the sensor and we call it the machine position-B. From this position the main motor FG sensor starts counting the pulse to determine the print drum position. The main FG sensor count is 2933 pulses for one full rotation from position-B to the next position-B. 326 pulse count is approximately 40 degrees turn from position-B, and this is where the print drum angle is 0 (zero) degrees and is called position-A of the print drum and this is the position in which the clamp plate is on the top and clamps the master during the master making operation.



3. Main Motor Safety Mechanism

Five safety switches (Serviceman safety SW, Master disposal box safety SW, Master making unit safety SW and Print drum safety SW) prevent the main motor, clamp motor, master removal vertical transport motor and master compression motor from turning ON when any one of these safety switches are not in contact.



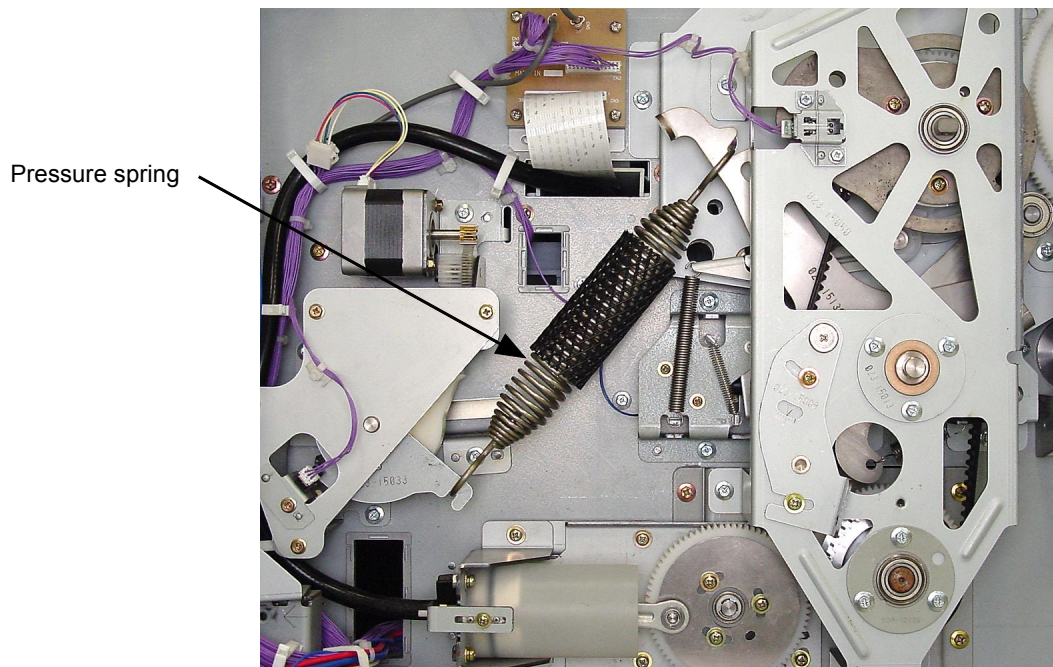


Disassembly

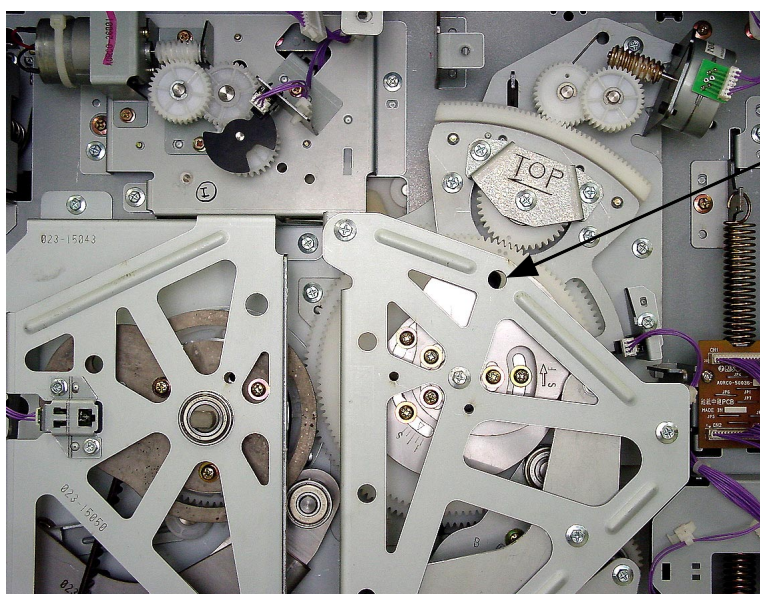
< Following two points must be followed when working on the drive area for **SAFETY** reasons. >

- 1) When performing maintenance on the main drive section and pressure section, remove the pressure spring at the start of the disassembly, and attach it only at the end of the reassembly.
- 2) Set the vertical print position at center (home position), and insert 8mm dia. JIG shaft into the position-B phase alignment hole, located on the paper feed timing area, to prevent the drive area from moving.

<Power to the machine should never be applied when the JIG shaft is inserted in the machine.>



0307



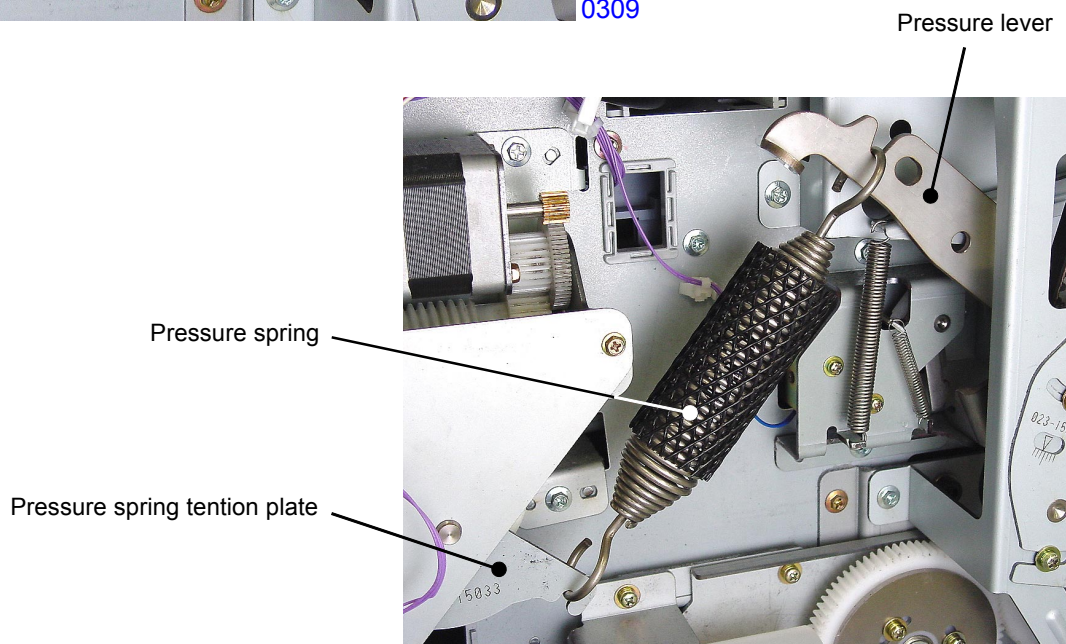
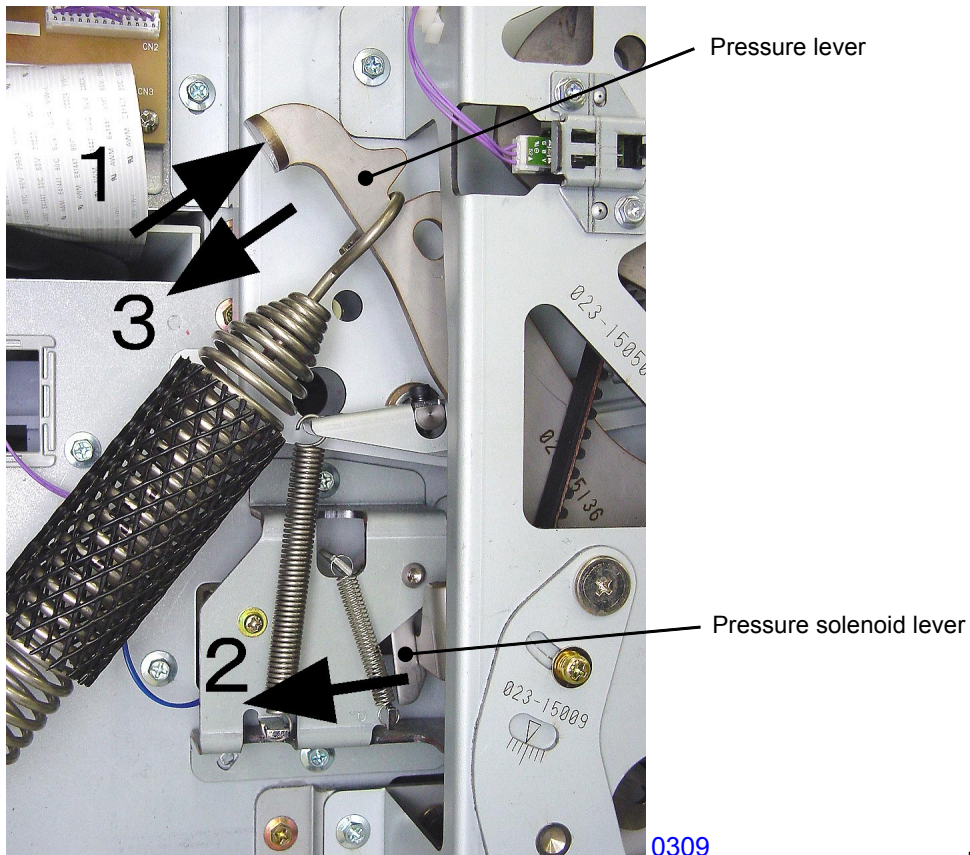
Position-B phase alignment hole on the paper feed timing area, in which 8mm dia. JIG shaft is inserted.

< Power to the machine should never be applied when the JIG shaft is inserted in the machine. >

0308

1. Removing the Pressure Spring

- (1) Run Test mode No.908 (Pressure control maintenance positioning adjustment), unplug the print drum and switch off the machine power.
- (2) Remove the rear cover and swing open the mechanical control & power supply PCB bracket.
- (3) Push the pressure lever over to the right and unhook the pressure solenoid lever from the pressure lever. Then return the pressure lever slowly to the left.
- (4) Detach the pressure spring from the pressure lever after removing the other end from the pressure spring tension plate.

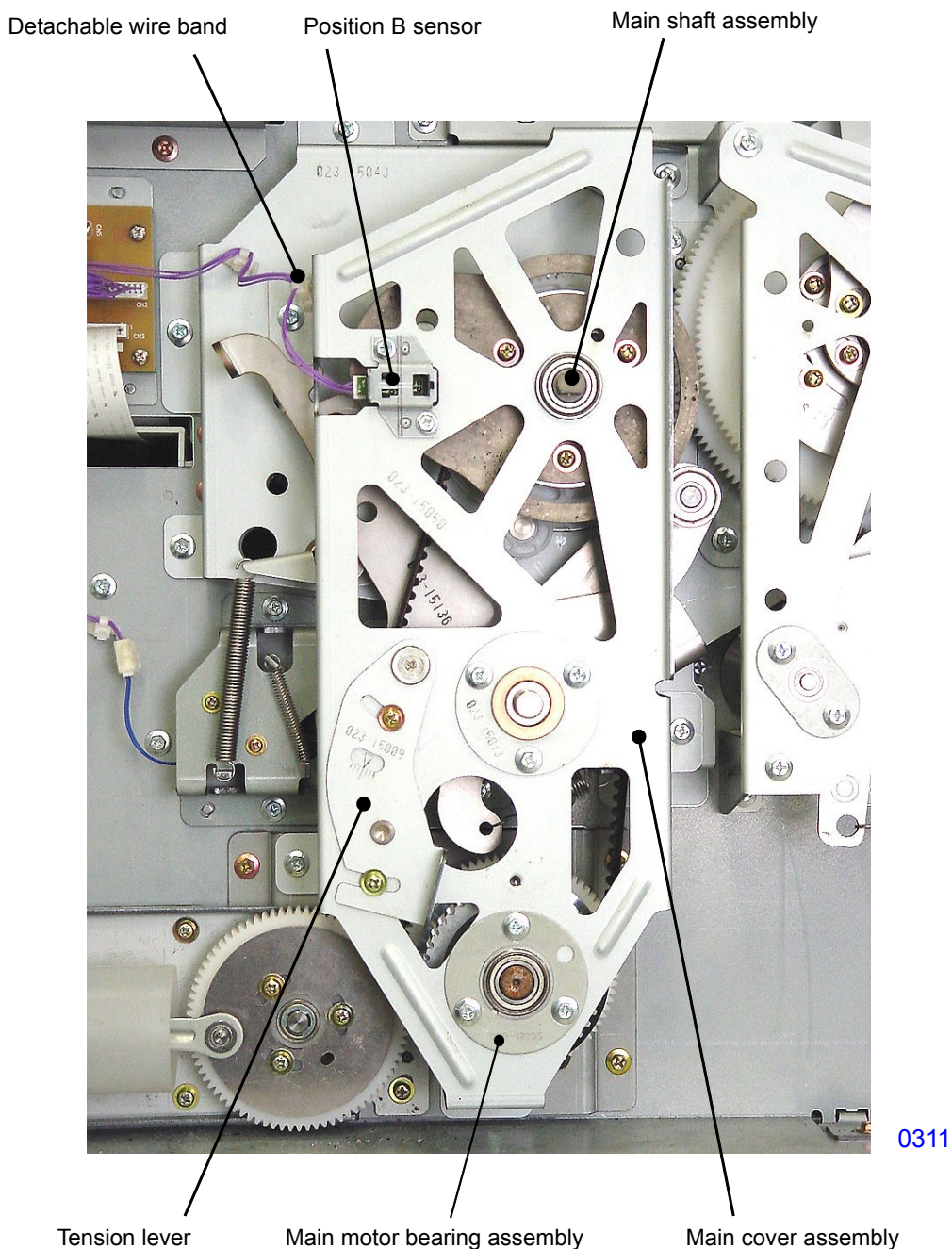


2. Removing the Main Belt

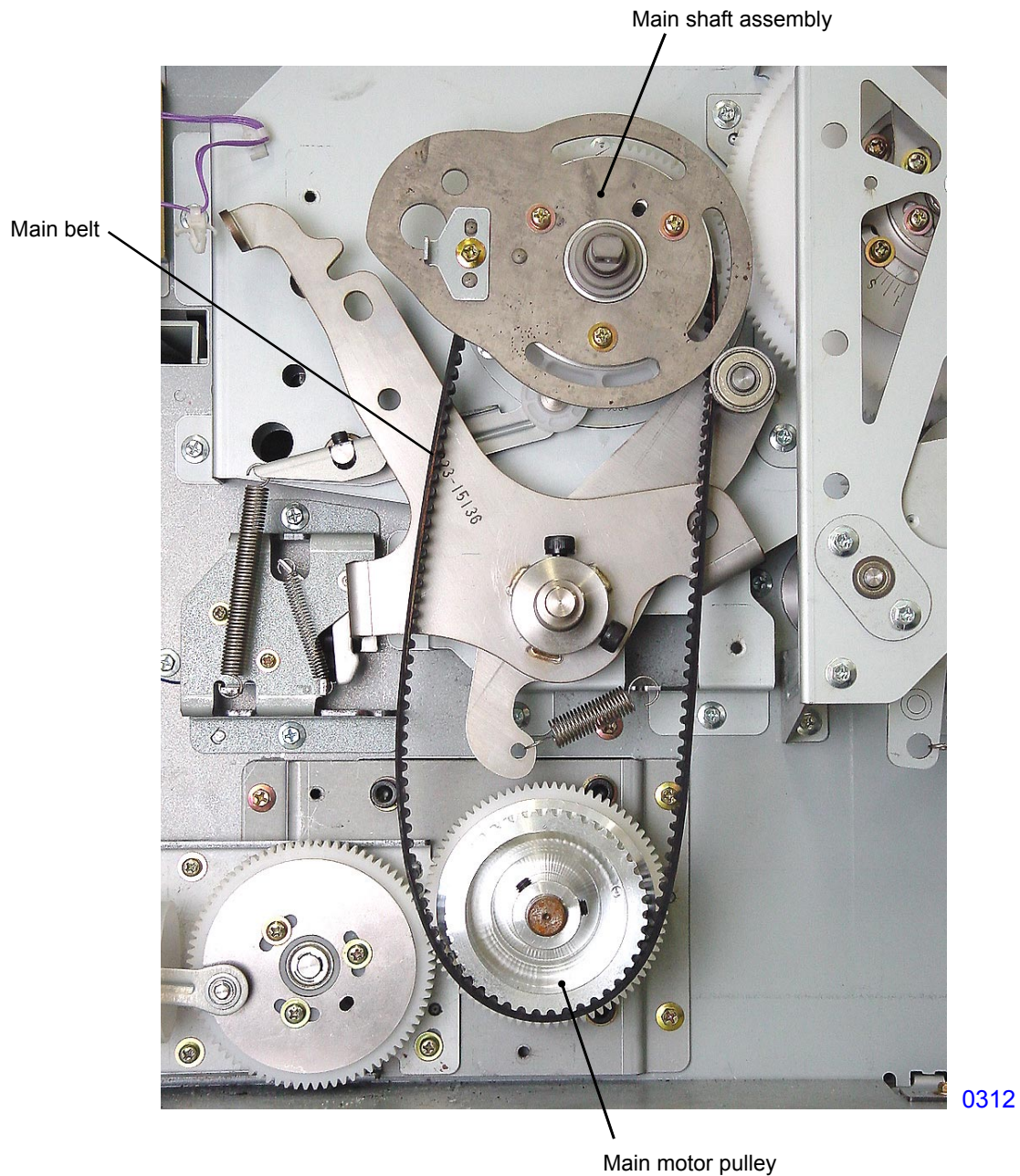
- (1) Remove the Pressure spring.
- (2) Insert 8mm diameter shaft JIG into the position-B phase alignment hole on the paper feed timing area (refer to page 3-6.)
- (3) Unplug the position B sensor connector and remove detachable wire band (1 pc) from main cover assembly.
- (4) Loosen screws (M4x8 : 2pcs) on the tension lever, and release the tension of the main belt.
- (5) Detach the main motor bearing assembly (M4x8 : 3pcs).
- (6) Dismount the main cover assembly (M4x8 : 5pcs).

* Dismount the main shaft assembly slowly to avoid pulling the main shaft assembly off the machine.

- continued on next page -



(7) Remove the main belt from the Main shaft assembly and main motor pulley.

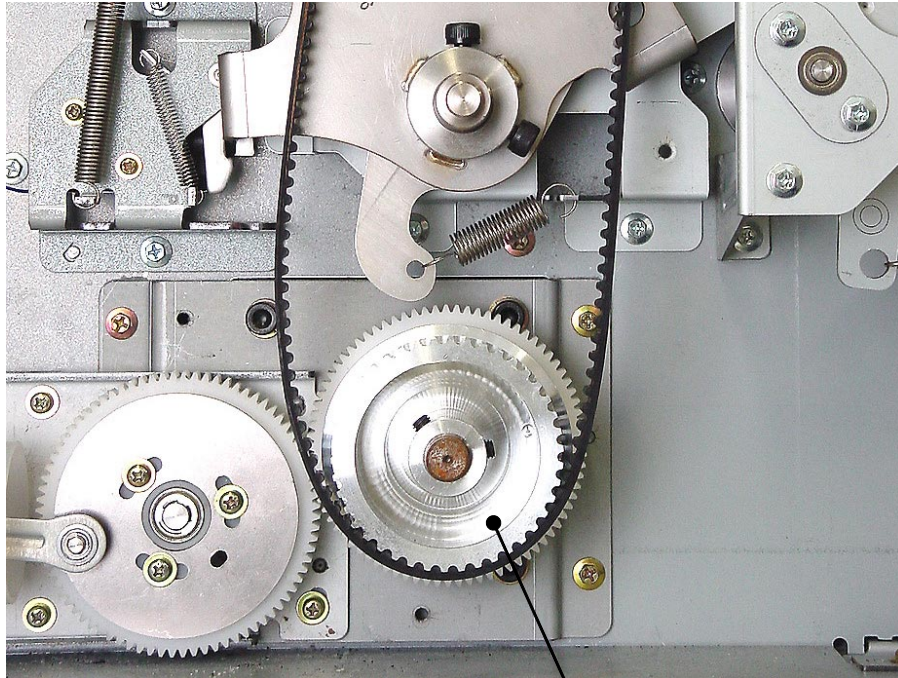


< Precautions in assembly >

- When putting the Main cover assembly back on the machine, push it firmly against the machine.
- Tighten the screw on the far top right on the Main cover assembly first.

3. Removing the Main Motor Pulley Assembly

- (1) Remove the Main belt from the machine (Refer to page 3-8).
- (2) Loosen set screws (M6x8: 2pcs), and detach the main motor pulley assembly.

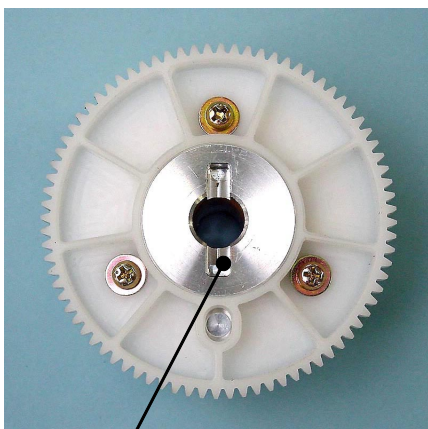


0313

Main motor pulley assembly

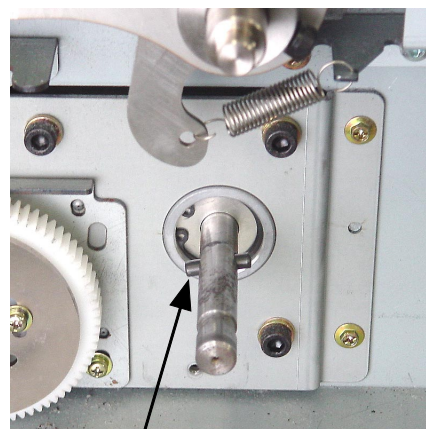
<< Precaution in assembly >>

- Align the groove made on the back of the Main motor pulley assembly against the Parallel pin on the Main motor shaft.



0314

Groove on the back of the Main motor pulley.



0315

Parallel pin on the Main motor shaft.

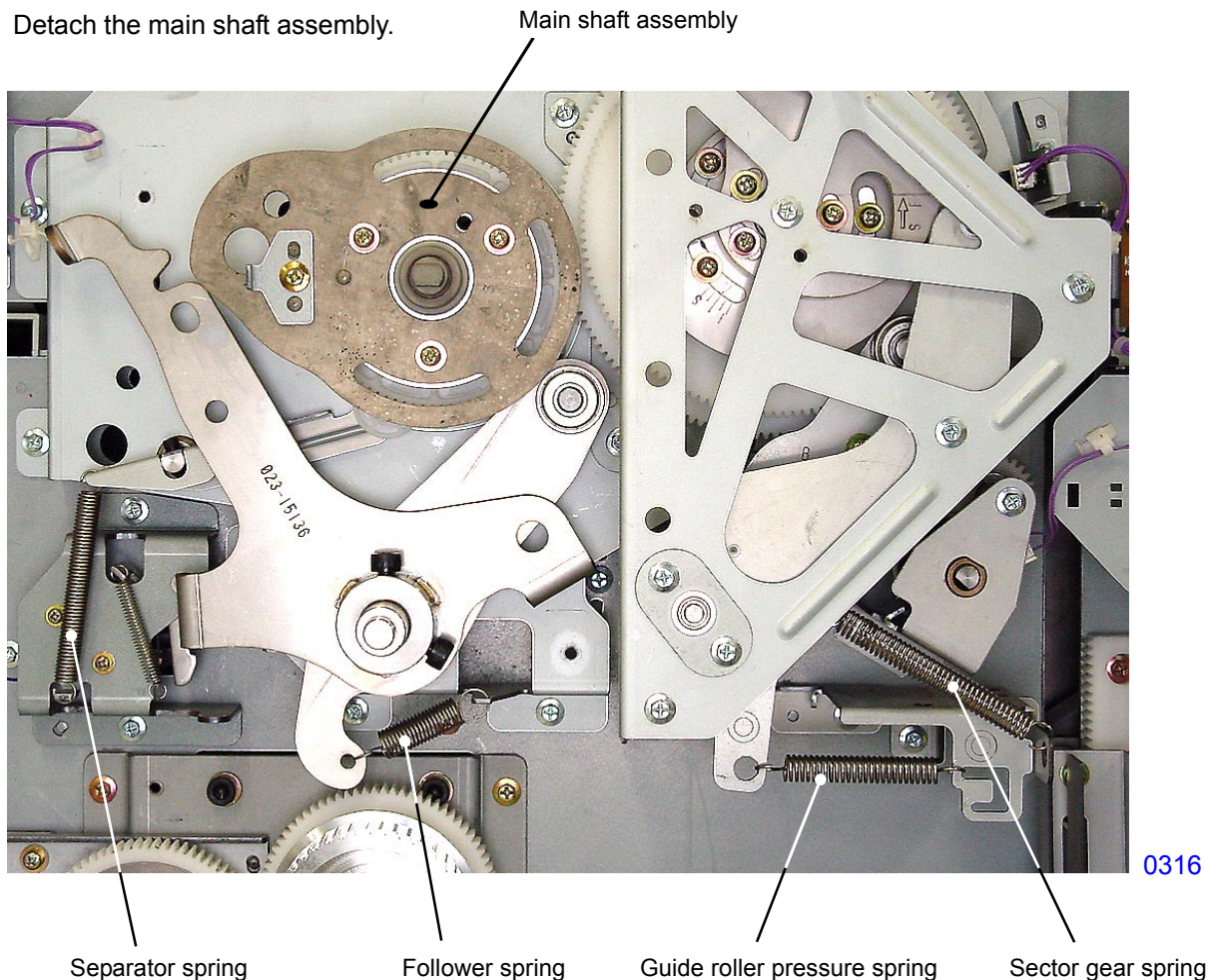
4. Removing the Main Shaft Assembly

(1) Remove the Main belt from the machine (Refer to page 3-8).

(2) Remove the following springs.

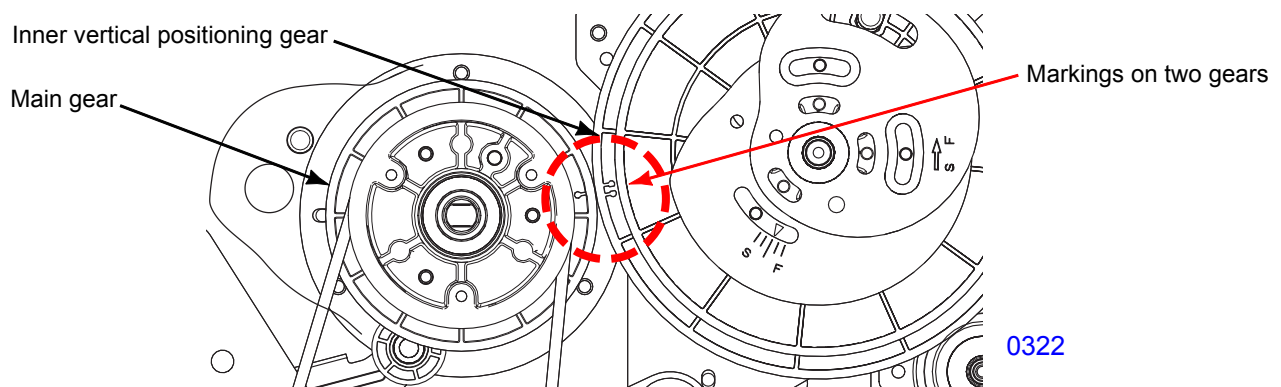
- Separator spring
- Follower spring
- Sector gear spring
- Guide roller pressure spring

(3) Detach the main shaft assembly.



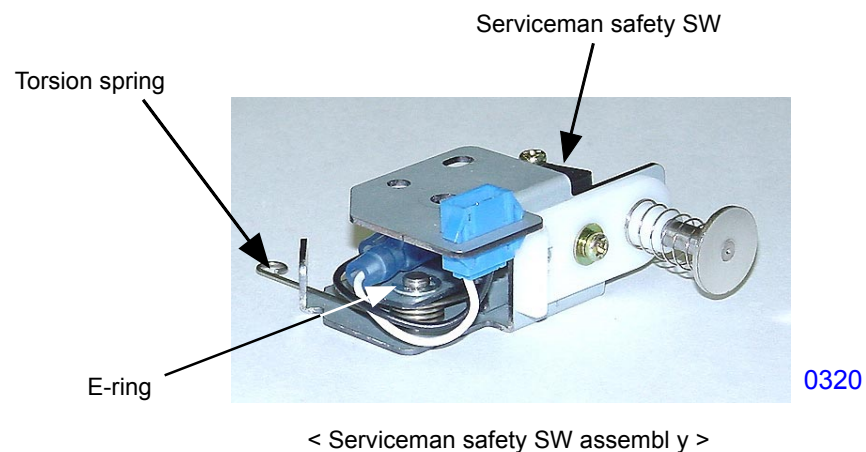
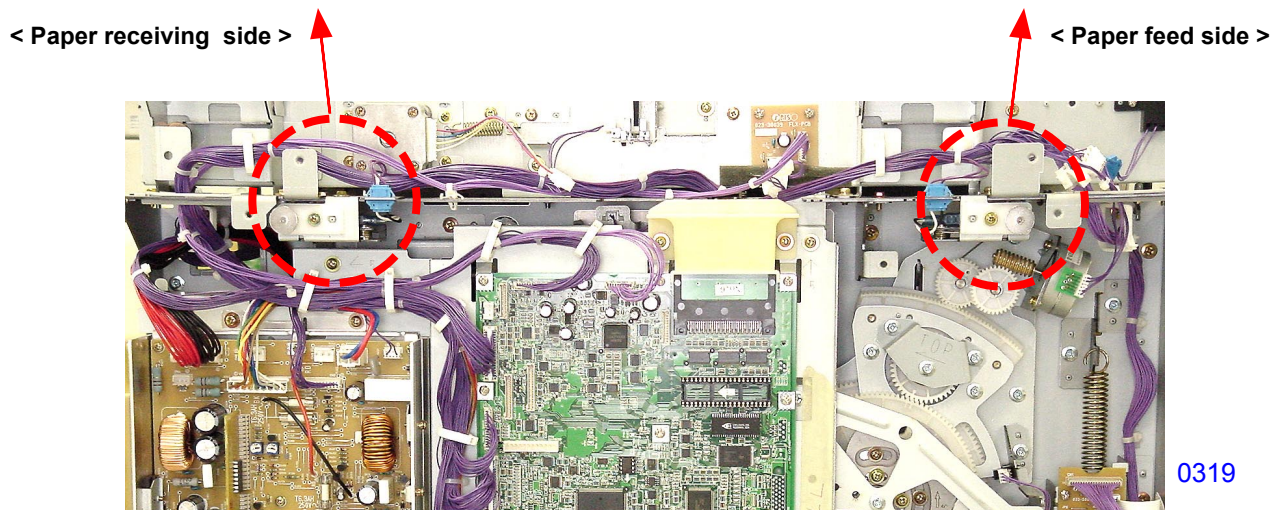
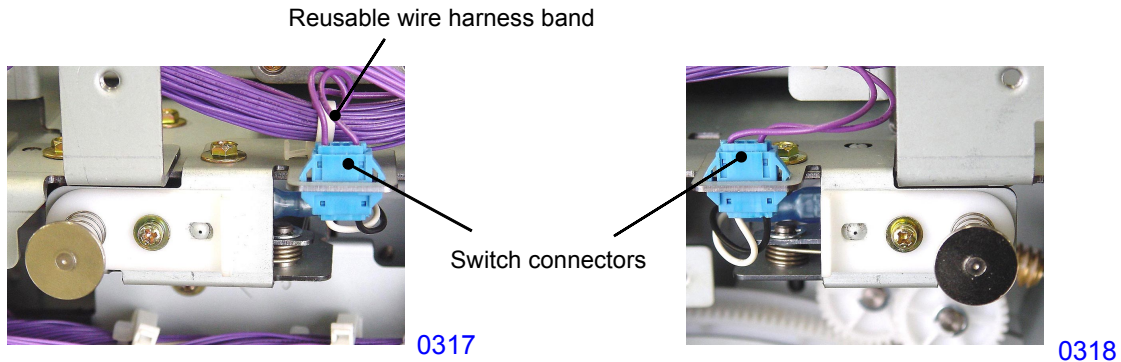
<< Precaution in assembly >>

- In attaching the Main shaft assembly back on the machine, first insert the 8mm diameter jig shaft in the paper feed drive area to fix the gears at Position-B, and then mount the Main shaft assembly back on the machine, aligning the markings between the Main gear and the Inner vertical positioning gear.



5. Removing the Serviceman Safety SW

- (1) Switch off the power, and remove the Rear cover and Scanner cover;rear.
- (2) Unplug the connectors from the two switches, and detach reusable wire harness band from the machine frame (on the paper receiving side only).
- (3) Remove a screw each (M4x8: 1pc), and detach the two serviceman safety SW assemblies.
- (4) Release the hook of the torsion spring, detach the E-ring and then remove the serviceman safety SW together with its mounting bracket.



< Serviceman safety SW assembly >

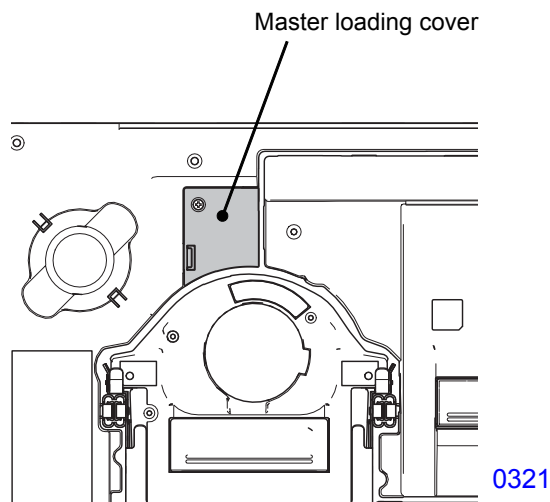
Adjustment

1. Print-Drum “Position-A” Adjustment

Checks and adjustment

- (1) Open the front door.
- (2) Remove a screw (M4x8: 1pc) to detach the master loading cover.
- (3) Go into the test mode, and run Test Mode No.881 (Position-A stop) to rotate and stop the print drum at “Position-A”.
- (4) Run Test Mode No.884 (Clamp 3-step movement) to confirm that when the position-A compensator arm comes down on the print drum on the 2nd of the 3 steps of the test mode, the print drum rotates back a distance of 3mm maximum or stays still. The print drum should not rotate forward when the compensator arm comes down.
- (5) If Position-A of the print drum is not within the specified position, run Test Mode No.941 (Print drum position-A adjustment) to adjust the “Position-A” of the print drum.
- (6) Repeat from step (3) until the position is correctly adjusted.

This adjustment does not affect the print drum position-B stop position.



2. Print-Drum “Position-B” Stop Position Adjustment

Checks and adjustment

- (1) Open the front door and press the green colored print drum release button.
- (2) Confirm that the print drum slides out of the machine smoothly when pulled out by hand.
- (3) If the print drum does not come out smoothly, run Test Mode No. 942 (Print drum Position-B Adjustment) to adjust the position-B stop position of the print drum.
- (4) Repeat from step (1) until the position is correctly adjusted.

This adjustment does not affect the print drum position-A.

NOTE: The print drum position-B stop position is calculated from the position-B of the machine by the pulse count of the main motor FG sensor (refer to page 3-3).

MEMO

CHAPTER 4: FIRST PAPER FEED SECTION

Contents

MECHANISM

1. Paper Feed Tray Mechanism	4-2
2. Paper Feed Tray Elevation Mechanism	4-3
<< Upper Limit Position of the Paper Feed Tray >>	4-4
3. Paper Feed Tray Safety Mechanism	4-5
4. First Paper Feed Drive Mechanism	4-6
5. Paper Stripping Mechanism	4-7
6. Paper Feed Pressure Adjustment Mechanism	4-8

DISASSEMBLY

1. Removing the Paper Feed Tray Unit	4-9
2. Removing Paper Det. Sensor, Paper Size Det. Sensor and Paper Width Potentiometer	4-11
3. Removing the Scraper Roller and Pick Up Roller	4-13
4. Removing the Paper Feed Roller Assembly	4-14
5. Removing the Paper Feed Tray Button and Paper Feed Tray Upper Safety Switch	4-15
6. Removing Paper Feed Tray Upper Limit Sensor and Paper Feed Pressure Sensor	4-16
7. Removing the Paper Feed Clutch	4-17
8. Removing the Elevator Motor	4-18
9. Removing the Paper Feed Tray Lower Safety Switch	4-19
10. Removing the Stripper Unit	4-20
11. Removing the Stripper Pad Assembly	4-21

ADJUSTMENT

1. Upper Limit Sensor Position Adjustment	4-22
2. Stripper Unit Adjustment	4-23
3. Paper-Feed Clutch ON Angle Adjustment	4-24
4. Paper-Feed Clutch OFF Angle Adjustment	4-24
5. Paper-Width Potentiometer Adjustment	4-25

Mechanism

1. Paper Feed Tray Mechanism

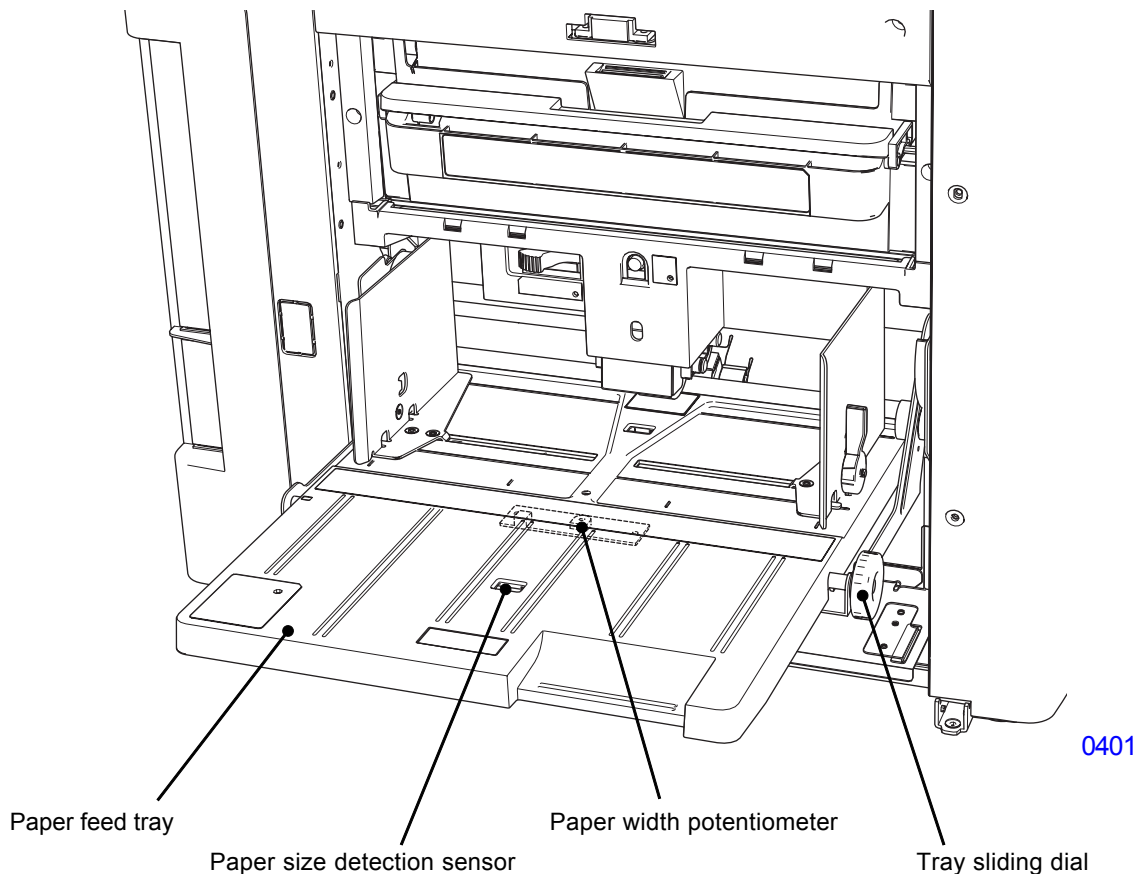
1) Horizontal positioning (horizontal print positioning) of the paper feed tray

The paper feed tray can be moved 10 mm to the right or left by turning the tray sliding dial by hand.

2) Print paper size detection

The paper feed tray uses the paper width potentiometer and paper size detection sensor to detect the size of the paper placed in the paper feed tray.

The paper width potentiometer detects the paper width, and the paper size detection sensor detects the paper length.



2. Paper Feed Tray Elevation Mechanism

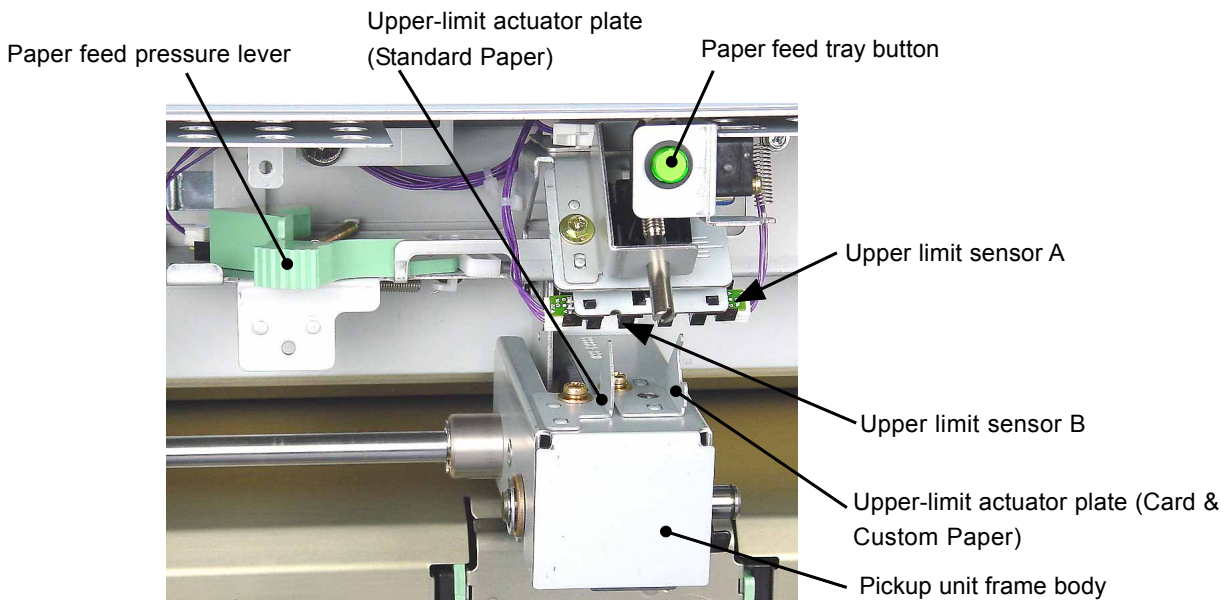
The presence of the paper in the paper-feed tray is detected by the paper-detection sensor.

When the paper is detected on the paper feed tray, and the Start key is pressed for a printing job, the elevator motor makes the paper feed tray to elevates up to the upper limit position.

RZ3 series machines have two upper limit sensors, A and B. Which one of the two sensors is active depends on the Paper feed pressure lever position. RZ2 series have only one upper limit sensor, which is sensor-B.

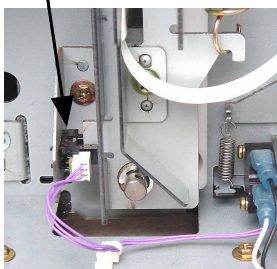
When the paper runs out from the paper feed tray, the feed tray comes all the way down to the lower limit position, which is detected by the lower limit sensor.

Paper feed tray can be lowered when needed by pressing the green colored Paper feed tray button. Releasing the finger from the button in less than 0.7 seconds will allow the try to come all the way down or until the button is pressed again. If pressed over 0.7 seconds, the tray moves down only while the button is pressed.



0402

Lower limit sensor



0403

< View from the rear >



0404

Paper feed tray

Paper detection sensor

Elevator motor

<< Upper Limit Position of the Paper Feed Tray >>

RZ2 models:

There is only one upper limit sensor, which is Upper limit sensor B. The upper limit position of the paper feed tray is when the upper-limit actuator plate (standard paper) blocks the light path of the sensor.

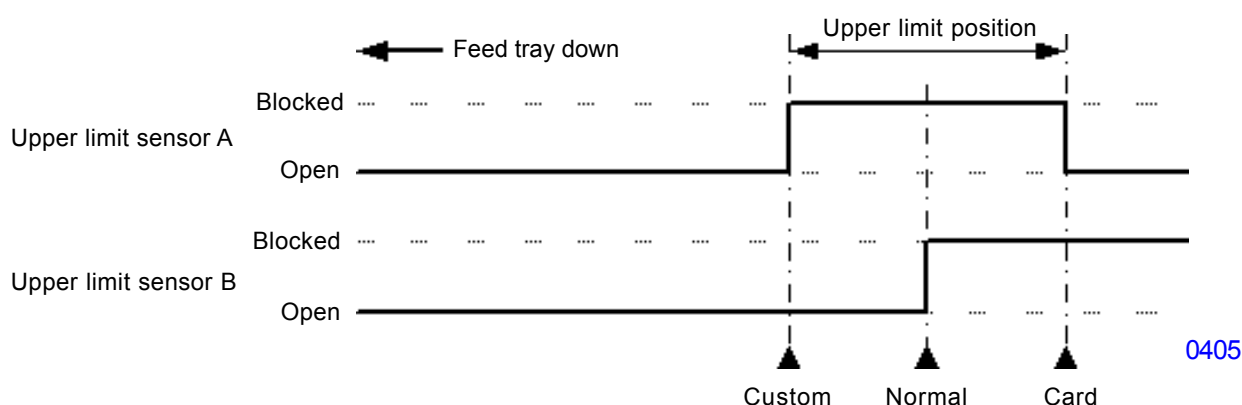
RZ3 models:

There are two upper limit sensors, A and B. The paper feed tray stops at the Upper-limit position for normal papers using upper limit sensor B and actuator plate (standard). When the plate cuts the light path of the sensor B, the tray stops at the upper limit position. The tray stops at the upper limit position for customs paper using the top edge of the actuator plate (card & custom paper) and upper limit sensor A. The upper limit position of the feed tray for the card is detected by the bottom edge of the actuator plate (card & custom paper) and upper limit sensor A. Once the bottom edge of the actuator plate (card & customs paper) escapes from the light path of the sensor A, the tray stops at the upper limit position for the card papers.

The chart at the bottom of the page shows the relation between the two sensors and the two actuator plates against the upper limit stop positions. The Card position is the highest, the Normal is second highest and the Custom is the lowest stop position.

The upper limit stop position of the paper feed tray can be selected by using test mode No. 740. Selecting Auto by the test mode allows the tray to stop at Normal position when the paper feed pressure lever is at Normal. If the lever is set to Card, the tray will stop at the Card position. If by the test mode either Normal, Card or Customs is selected, that would be the tray stop position independent from the paper feed pressure lever position.

The paper feed tray upper limit position is also selected by the Paper Finish user Customs Setting Mode. By selecting User 1, User 2, User 3, User 4 or User 5, the upper limit position of the paper feed tray is according to the setting made on test mode No. 763, 766, 769, 772 and 775 by serviceman.

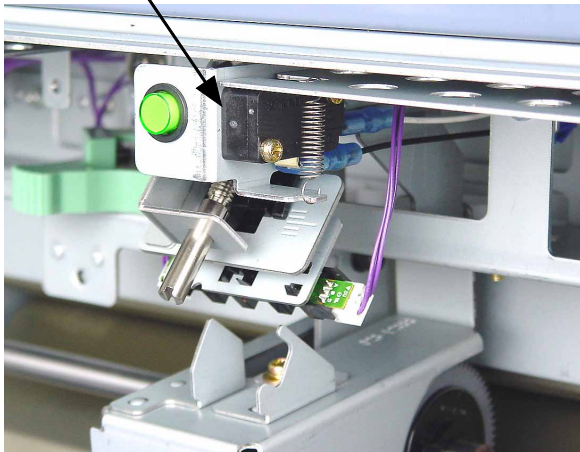


3. Paper Feed Tray Safety Mechanism

The paper feed tray upper safety switch and the paper feed tray lower safety switch ensure the safety while the paper feed tray is being raised or lowered.

If the paper feed cover is pushed up, the paper feed tray upper safety switch goes OFF, and if the lower limit frame is pressed down, the paper feed tray lower safety switch goes OFF. If either one of the two safety switches goes OFF, the elevator motor is turned off.

Paper feed tray upper safety switch



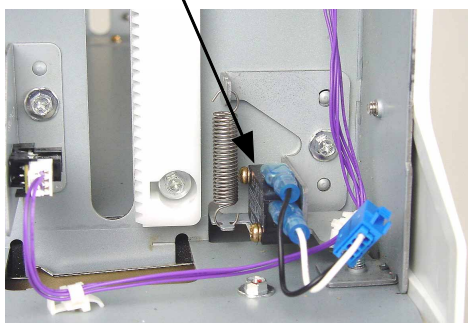
0407



0406

Paper feed cover

Paper feed tray lower safety switch



0409



0408

Lower limit frame

4. First Paper Feed Drive Mechanism

When the Start key is pressed for a printing job, the Main motor activates and the drive is transferred by the main belt to rotate the print drum.

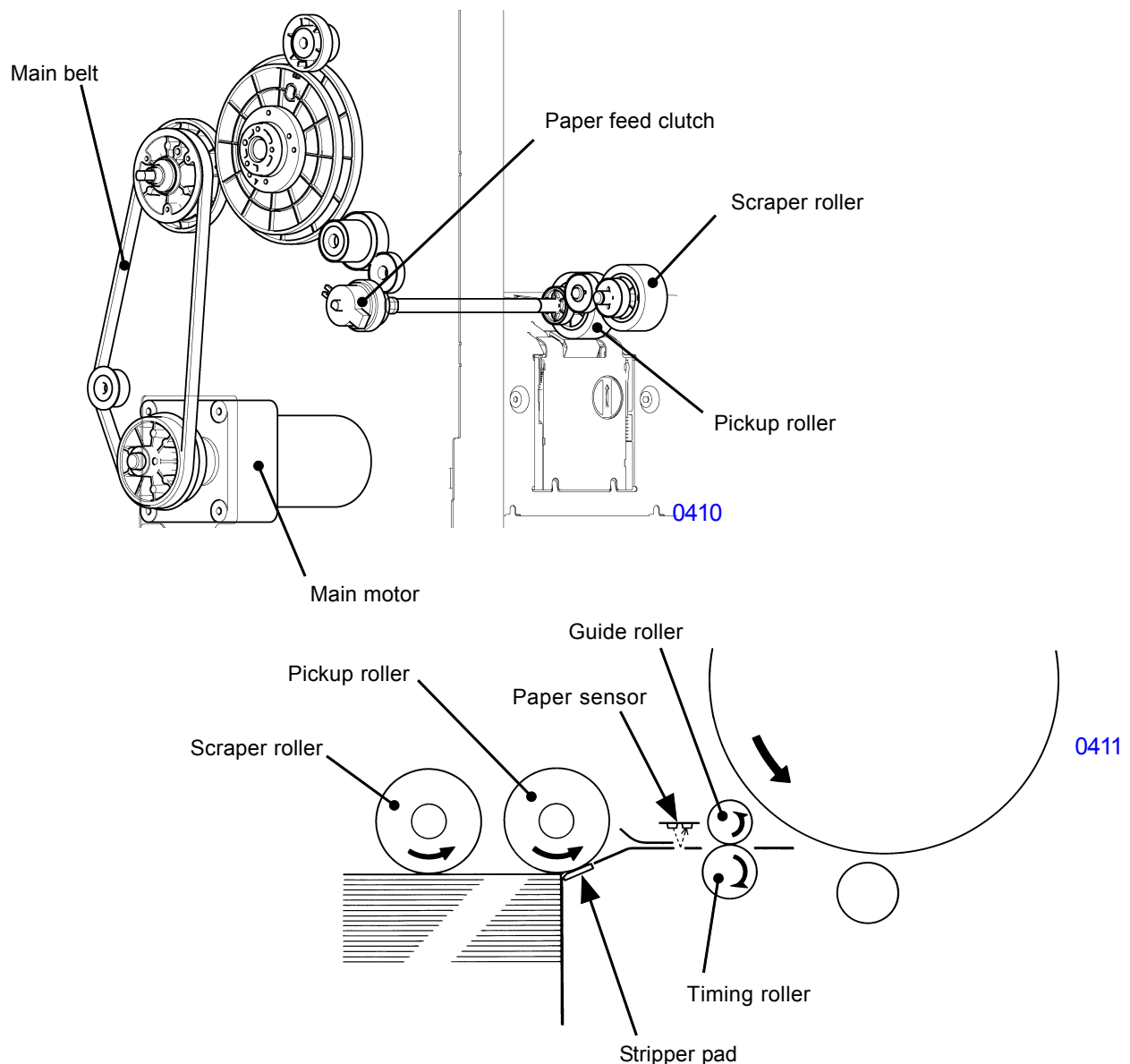
When the print drum rotates to a certain angle from the position-A, the paper feed clutch activates and rotates the scraper and the pickup rollers, sending the paper on the paper feed tray into the machine.

As the paper is fed into the machine, the leading edge of the paper blocks the light path of the paper sensor.

At a certain drum angle from when the light path of the paper sensor is cut, the paper feed clutch deactivates and finishes the first paper feeding action. When the first paper feeding ends, the leading edge of the paper is hitting against the timing roller and guide roller (the two rollers are touching each other and blocking the paper path), and makes a buckle at the tip.

At the same time the paper feed clutch activates, the paper sensor checks whether the paper is picked up from the paper feed tray or not. If the paper sensor does not detect the paper coming into the machine, it is judged that no first paper feeding was made and shows paper jam message.

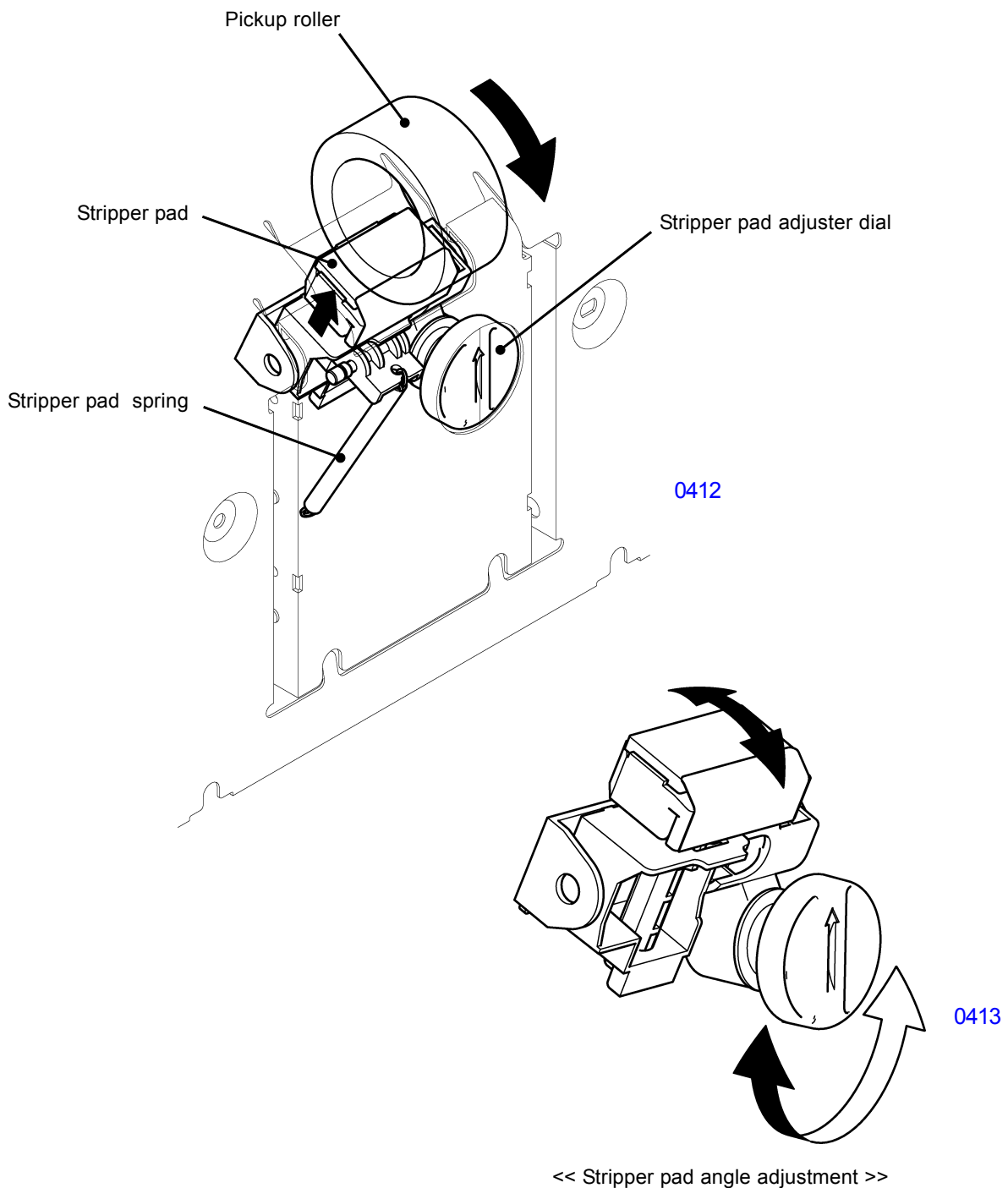
Both the scraper roller and pickup roller have built-in one-way bearing for a free rotation, allowing the paper to be picked up by the second paper feed mechanism without the drag of the first paper feed area.



5. Paper Stripping Mechanism

The papers on the paper feed tray is fed in between the pickup roller and stripper pad by the rotation of the scraper roller. Of the papers pushed in between the pickup roller and the stripper pad, the upper most one sheet is fed into the machine, towards the second paper feed area.

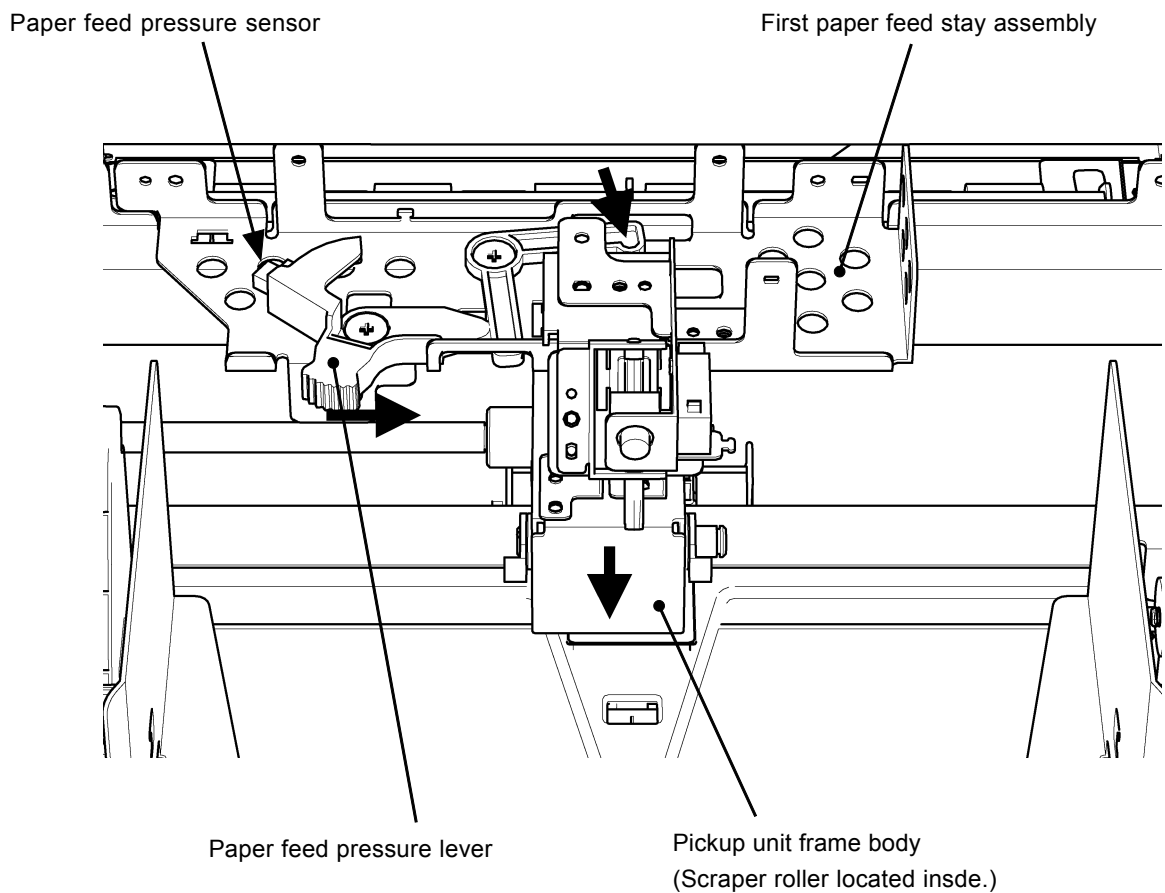
The stripper pad is pressed against the pickup roller by the pull of the stripper spring, creating a resistance to let only one sheet of paper to pass through. The stripper pad angle can be adjusted by the machine operator using the stripper pad adjuster dial.



6. Paper Feed Pressure Adjustment Mechanism

The paper feed pressure adjust lever is located on the left-hand side of the first paper feed stay assembly. Sliding the lever to the right or left changes the paper feed pressure from weak (NORMAL paper) to strong (CARD paper). Sliding the lever to the right increases the paper-feed (scraper) pressure.

To which position the paper feed pressure lever is selected is detected by the paper feed pressure sensor.

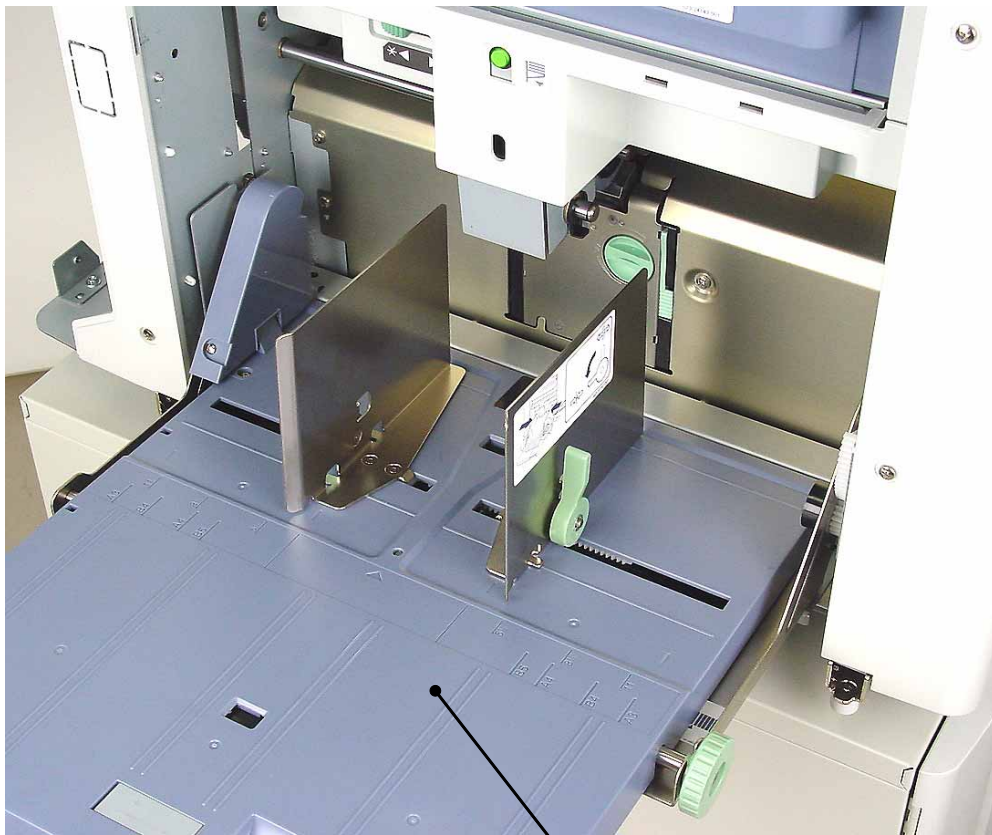


0414

Disassembly

1. Removing the Paper Feed Tray Unit

- (1) Lower the paper feed tray all the way down and switch OFF the machine power.
- (2) Close the paper feed tray and detach the hinge cover by removing screws (M3x6: 2 pcs).
- (3) Open the paper feed tray and remove the flat wire harness cover by removing screw (M3x5: 1pc).
- (4) Remove the connector cover by removing screw (M3x5 :1pc).
- (5) Pull out the flat wire harness from the connector and unhook the wire harness holder (clear Mylar sheet) from the paper feed tray mount.
- (6) Remove E-rings (1pc each) on the left and right of the paper feed tray unit, and remove the tray unit from the machine.



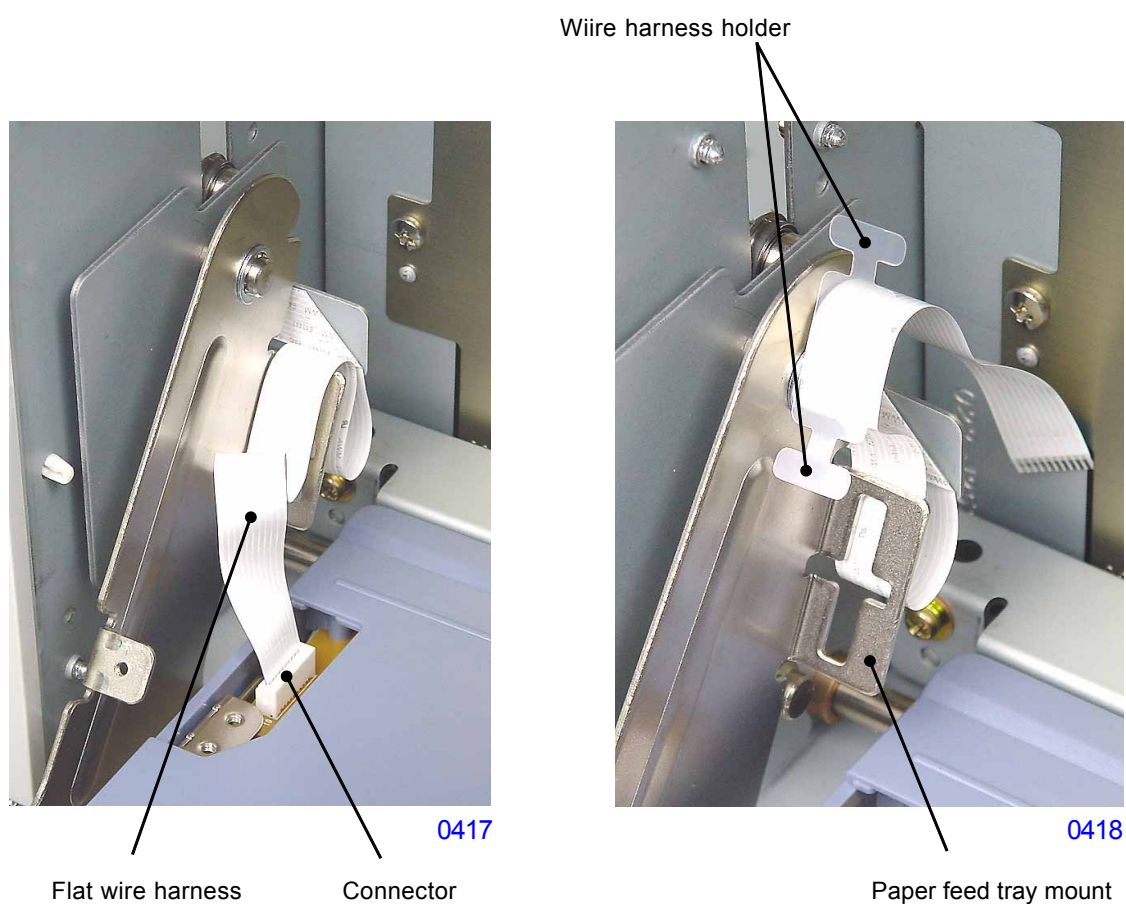
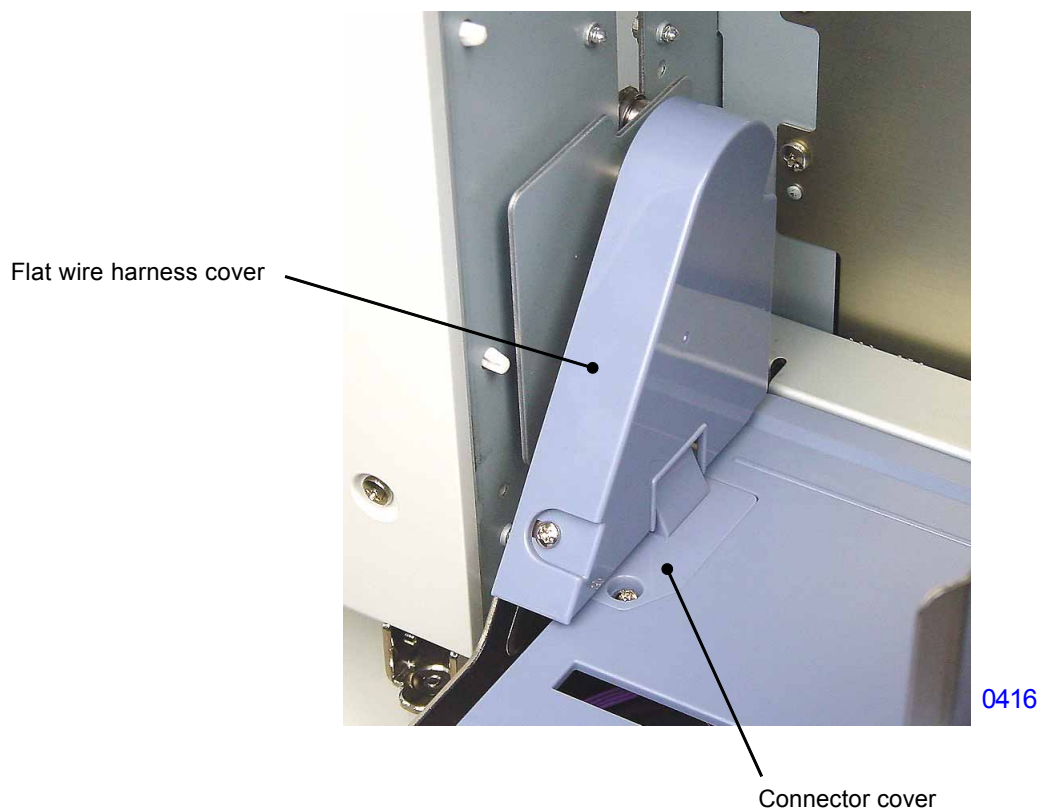
0415



0447

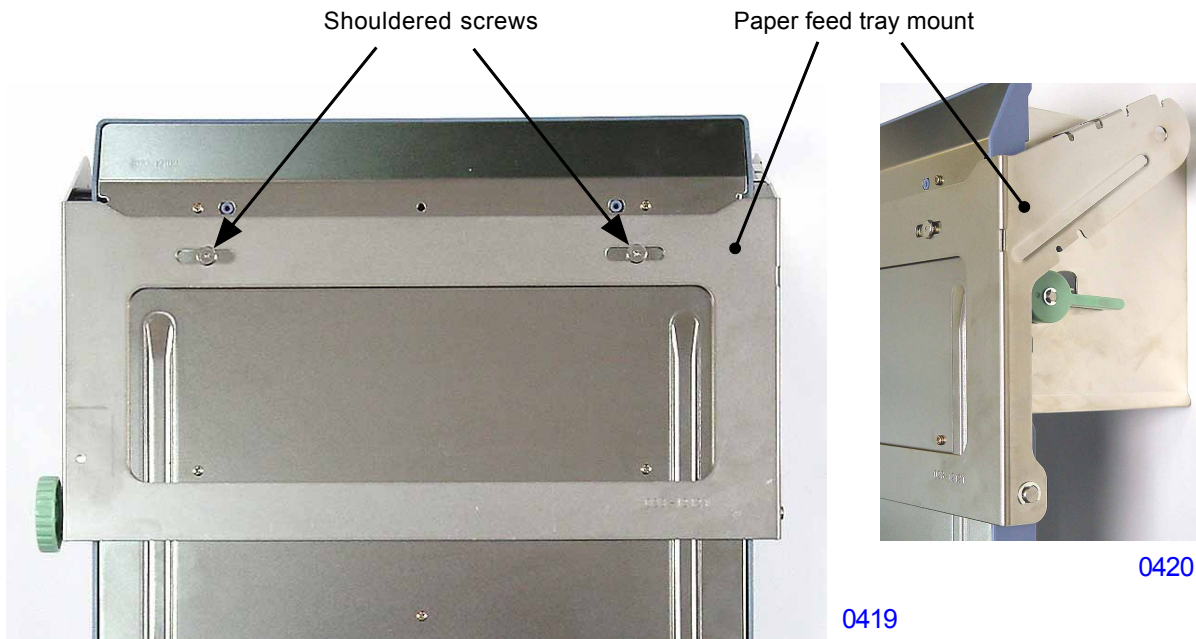
Paper feed tray unit

Hinge cover



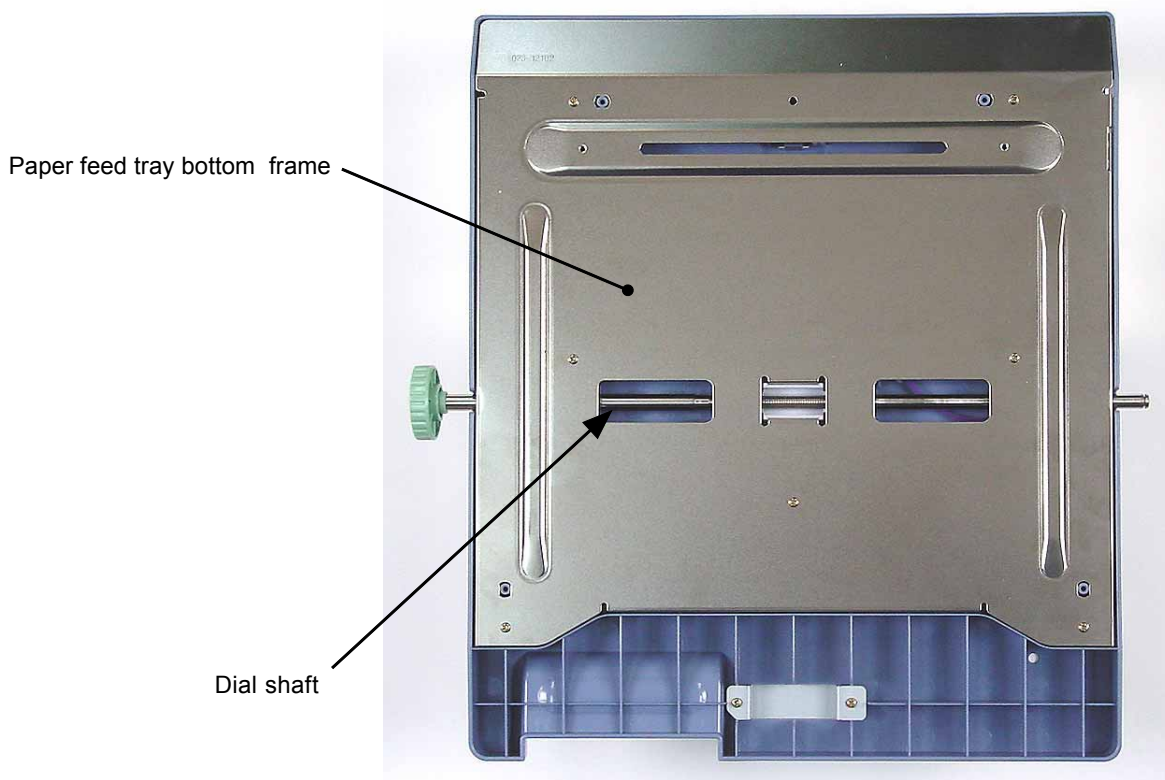
2. Removing Paper Det. Sensor, Paper Size Det. Sensor and Paper Width Potentiometer

- (1) Lower the paper-feed tray all the way down, switch OFF the power to the machine.
- (2) Remove the paper feed tray from the machine.
- (3) Remove two shouldered screws.
- (4) Remove the E-ring on the rear side, slide the Dial shaft to the front, and detach the paper-feed tray mount.
- (5) Remove screws (3x8: 7pcs) and detach the paper-feed tray bottom frame.



< Operator side of machine >

< Drive side of machine >

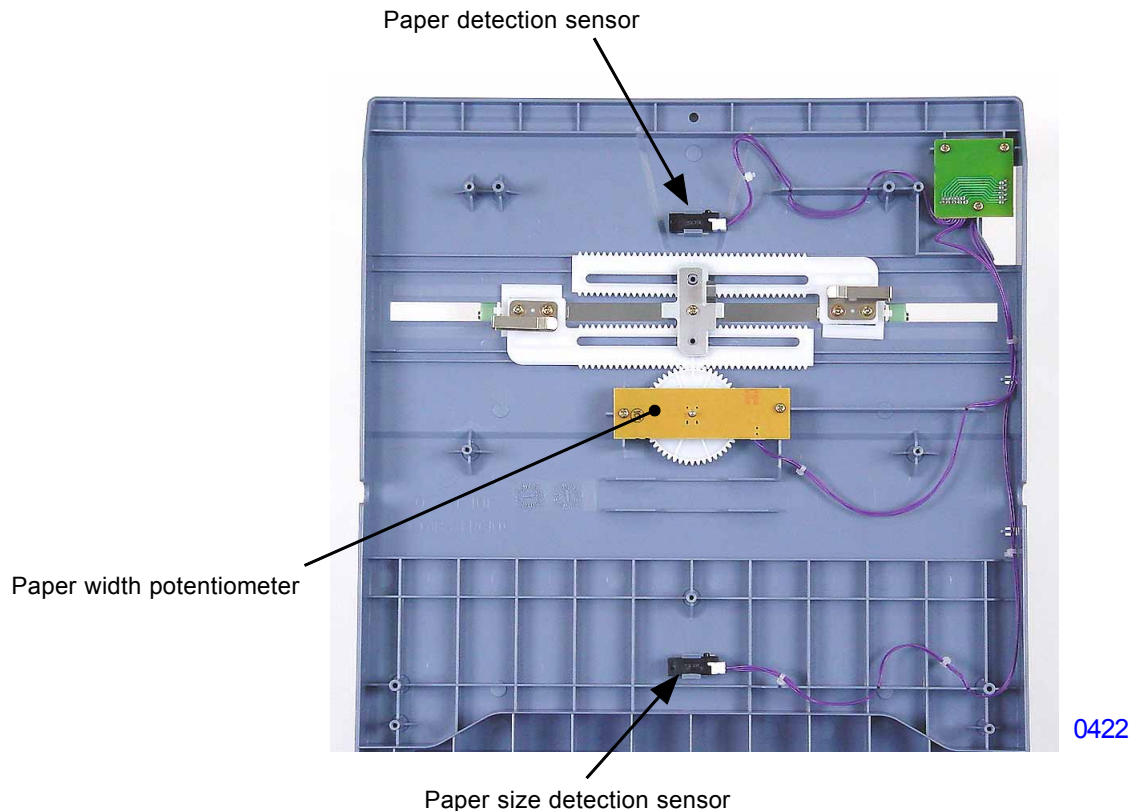


Removing the Paper Detection Sensor and Paper Size Detection Sensor

- (6) Unplug connectors from each sensor and unhook the craws of the sensors and remove from the tray.

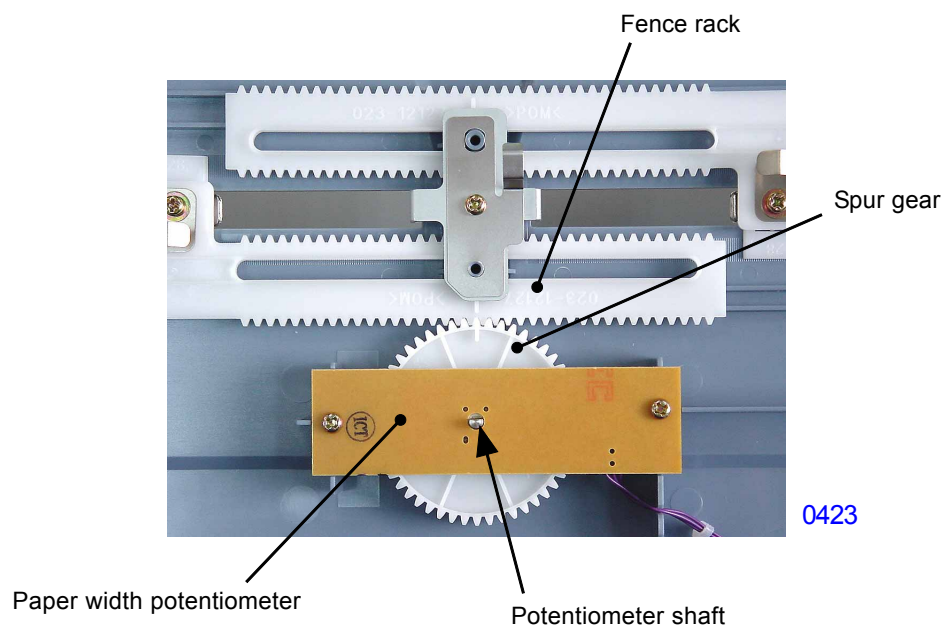
Removing the Paper Width Potentiometer

- (5) Remove screws (3x8: 2pcs), unplug the connector, and remove the paper width potentiometer.



<< Precaution in assembly >>

Align the eye mark line on the fence racks and spur gear in a straight line and insert the potentiometer-shaft through the spur gear. Screw on the paper width potentiometer on the paper feed tray with the flat cut on the shaft hole facing towards the eye mark line on the spur gear.



3. Removing the Scraper Roller and Pick Up Roller

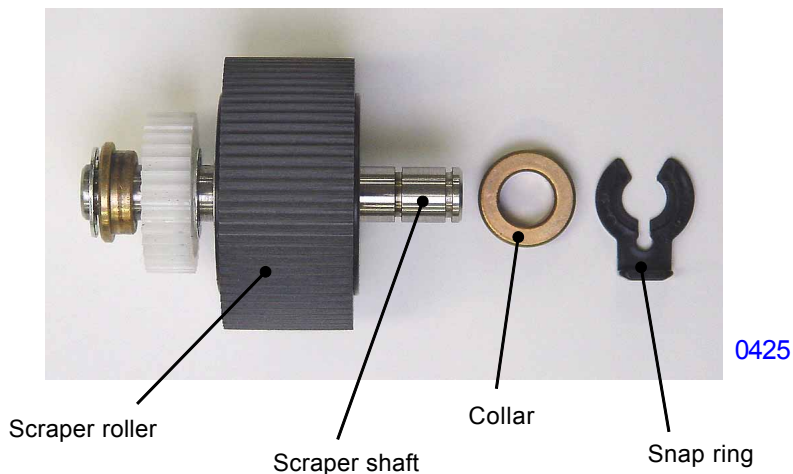
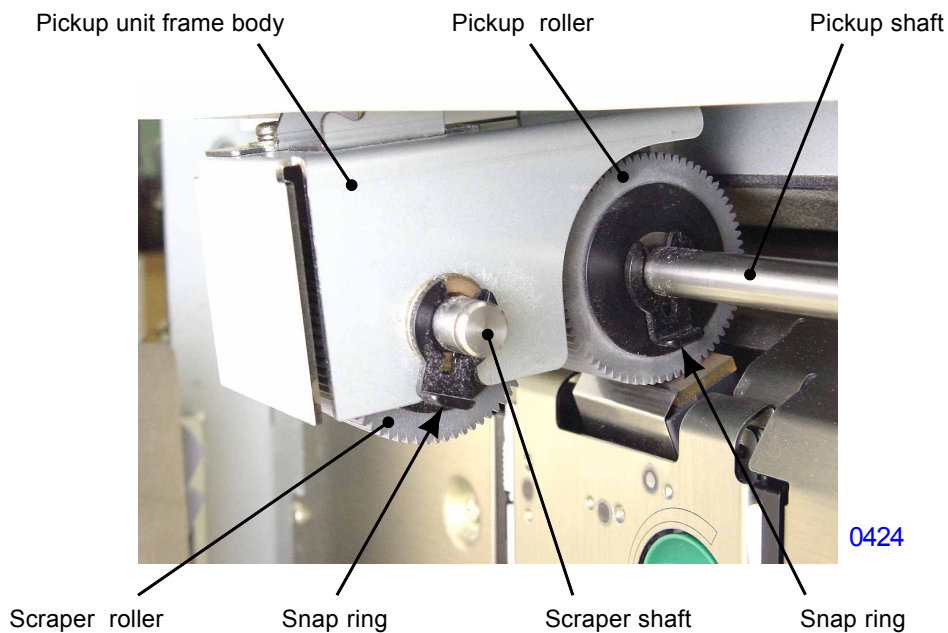
Removing the Scraper Rollers

- (1) Lower the paper feed tray all the way down, and switch OFF the machine power.
- (2) Remove the snap ring from the scraper shaft, and detach the collar next to the snap ring.
- (3) Slide the scraper shaft to the rear and remove collar from the pickup unit frame body, and remove the scraper roller from underneath the frame body, together with the scraper shaft.
- (4) Slide out the scraper roller from the scraper shaft.

* Only the rubber wheel of the scraper roller needs to be replaced if the roller is worn. The plastic core of the roller can be reused. This is the same with the pickup roller.

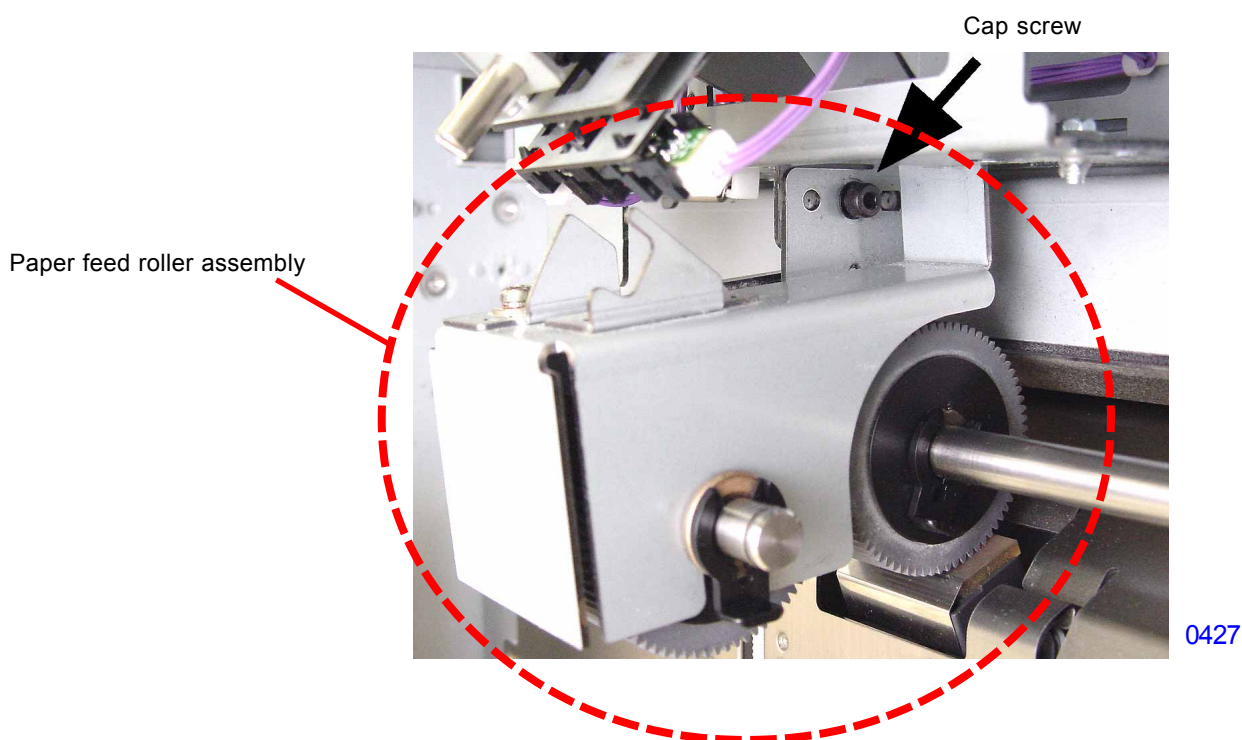
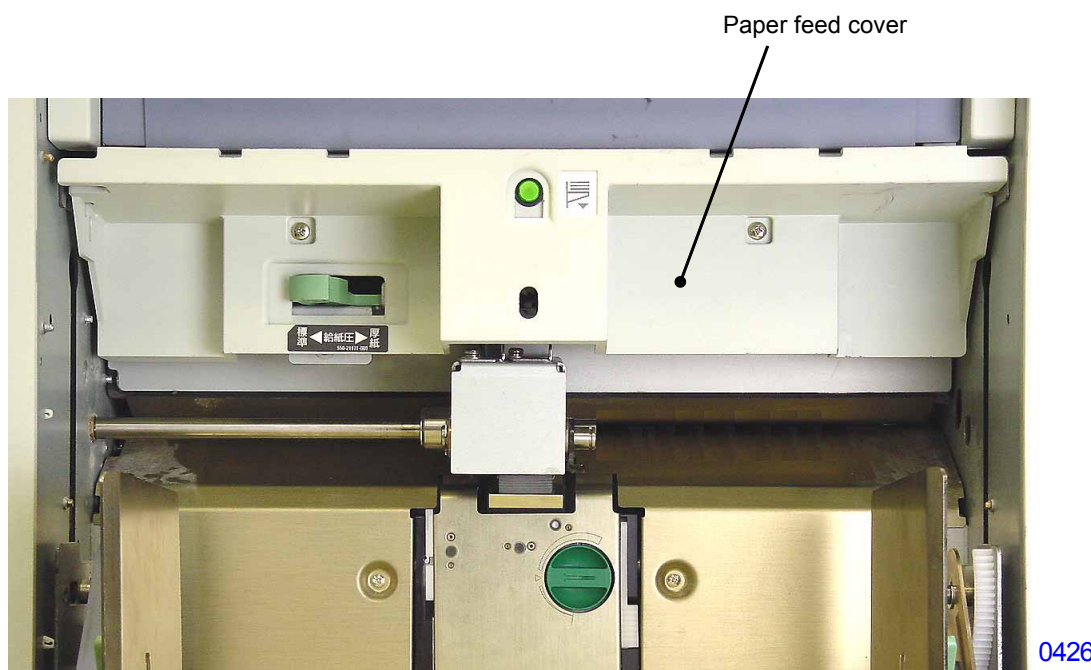
Removing the Pickup Roller

- (1) Lower the paper feed tray all the way down, and switch OFF the machine power.
- (2) Remove the snap ring from the pickup shaft.
- (3) Slide out the pickup roller from the pickup shaft.



4. Removing the Paper Feed Roller Assembly

- (1) Lower the paper feed tray all the way down, and switch OFF the machine power.
- (2) Remove the paper feed cover by removing screws (M4x8: 2pcs).
- (3) Remove a cap-screw (M4x8: 1pc) and detach the paper feed roller assembly.



5. Removing the Paper Feed Tray Button and Paper Feed Tray Upper Safety Switch

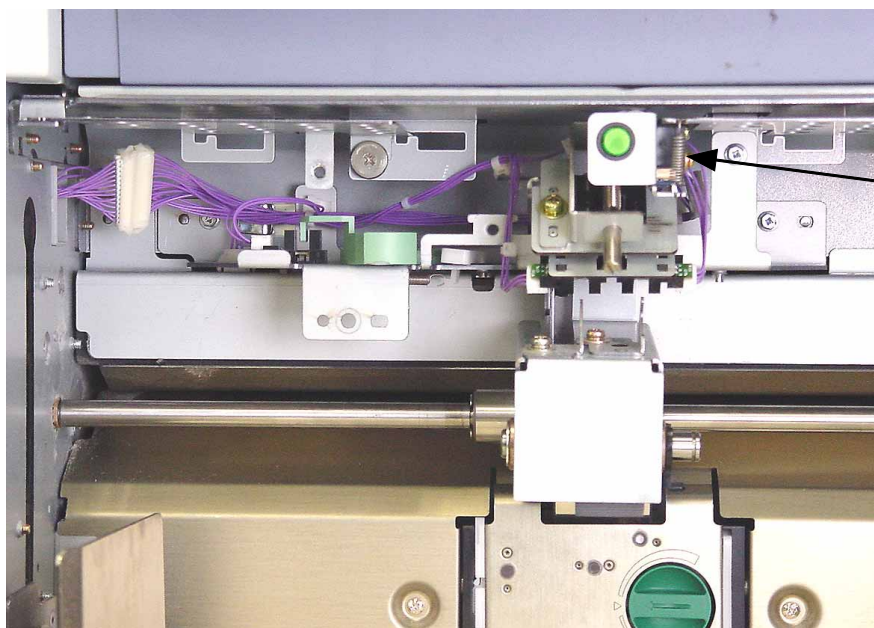
- (1) Lower the paper feed tray all the way down and turn OFF the machine power.
- (2) Remove the following components.
 - Paper feed cover
 - Paper feed roller assembly
- (3) Unplug two connectors.
- (4) Detach the paper feed tray upper safety switch spring.
- (5) Remove screws (M3x6: 3pcs), unplug the wire harness connector from the paper sensor, and remove the first paper feed stay assembly.

Removing the paper feed tray button

- (6) Unplug the connector and detach the button after unhooking the hooks (two locations).

Removing the paper feed tray upper safety switch

- (6) Unplug the connector, remove screws (M3x14: 2pcs), and detach the safety switch.

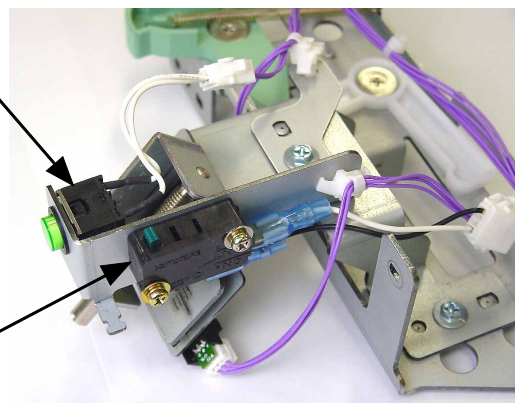


Paper feed tray upper safety switch spring

0428

Paper feed tray button

Paper feed tray upper safety switch



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< First paper feed stay assembly >

6. Removing Paper Feed Tray Upper Limit Sensor and Paper Feed Pressure Sensor

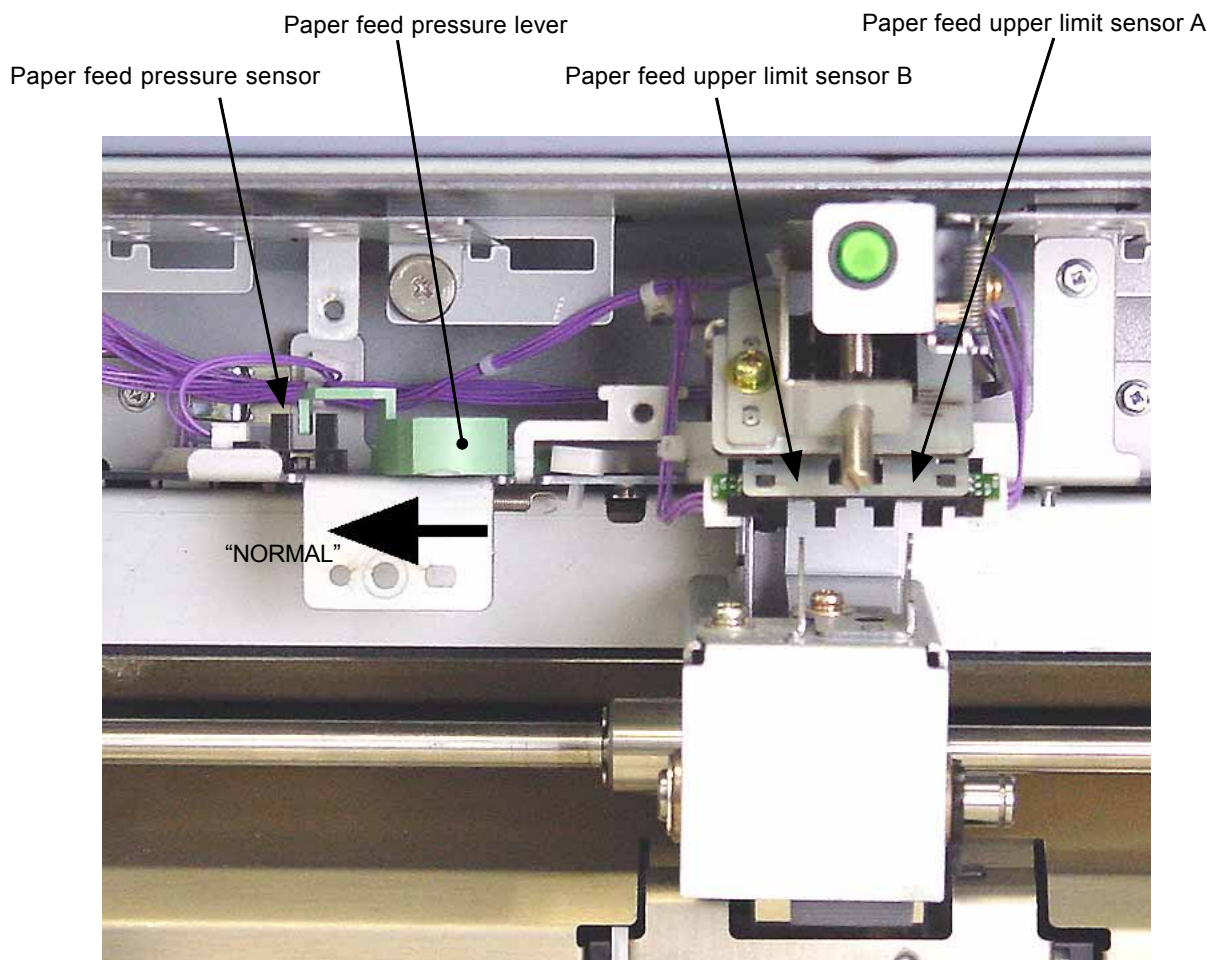
- (1) Lower the paper feed tray fully and switch off the power.
- (2) Remove the paper feed cover.

Removing the paper feed upper limit sensor

- (3) Unplug the connector and remove each sensor.

Removing the paper feed pressure sensor

- (3) Set the paper feed pressure lever to "NORMAL".
- (4) Unplug the connector and detach the paper feed pressure sensor.



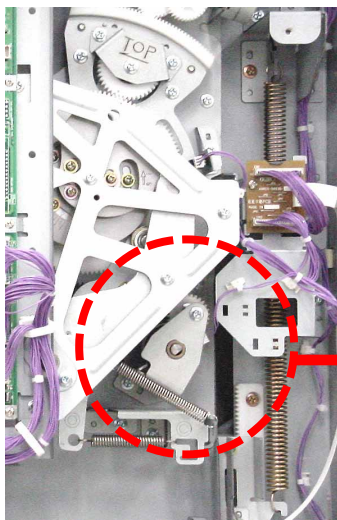
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7. Removing the Paper Feed Clutch

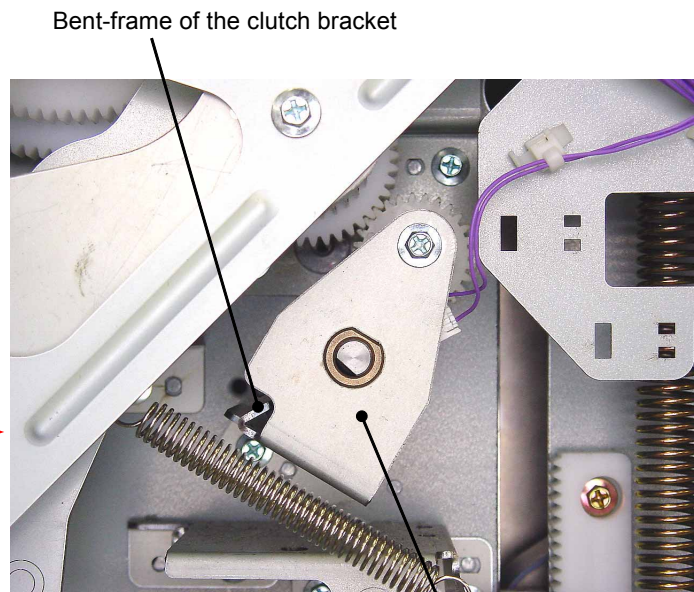
- (1) Switch off the power and remove the rear cover.
- (2) Remove screws (M4x8: 2pcs), and detach the pickup unit clutch bracket and the bearing metal.
- (3) Unplug the connector and detach the paper feed clutch.

<< Precautions in Assembly >>

- Insert the tip of the clutch into the recess made on the pickup shaft.
- Hook the paper feed clutch lock onto the bent frame of the clutch bracket.



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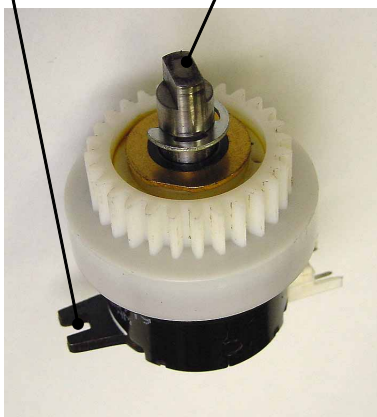


0432

Clutch bracket

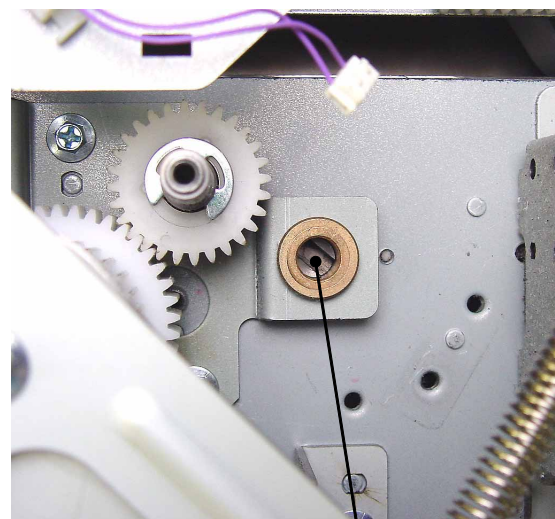
Paper feed clutch lock

Tip of the paper feed clutch



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<< Paper feed clutch >>



0434

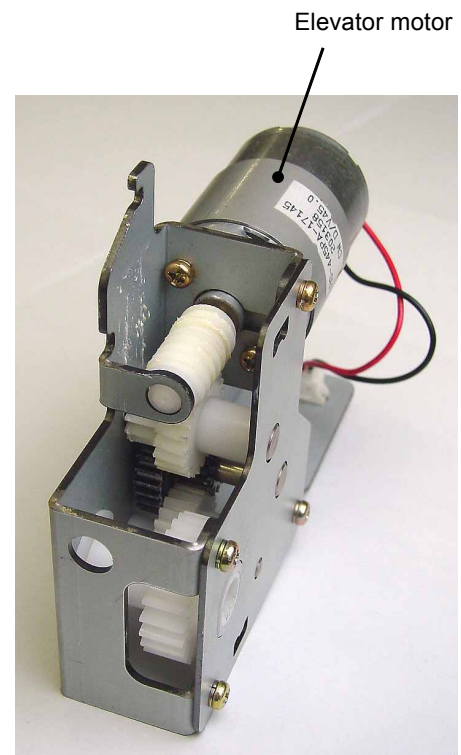
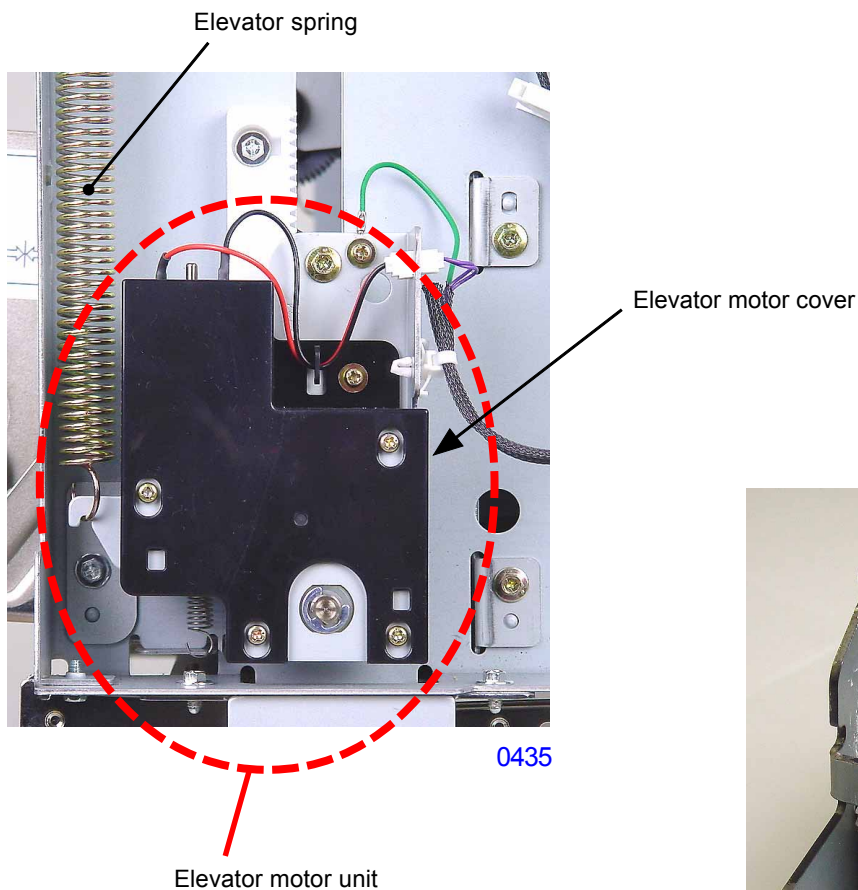
Recess made on the pickup shaft

8. Removing the Elevator Motor

- (1) Lower the paper feed tray all the way down and turn OFF the machine power.
- (2) Remove the front cover.
- (3) Of the elevator springs on each side of the machine, front and back, detach the one in the front which hooks on the elevator motor unit.
- (4) Unplug the connector, remove E-ring, remove a screw (M4x8:1pc) and detach the elevator motor unit.

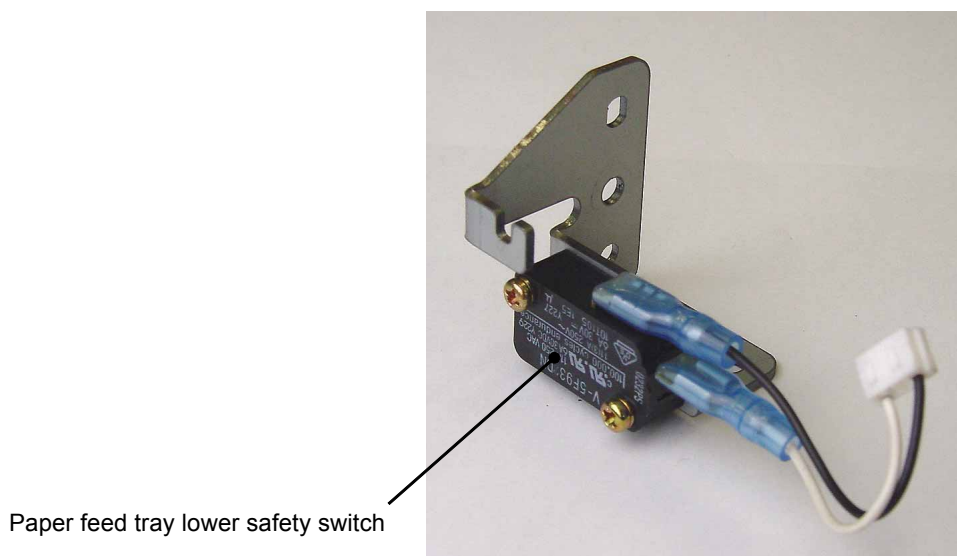
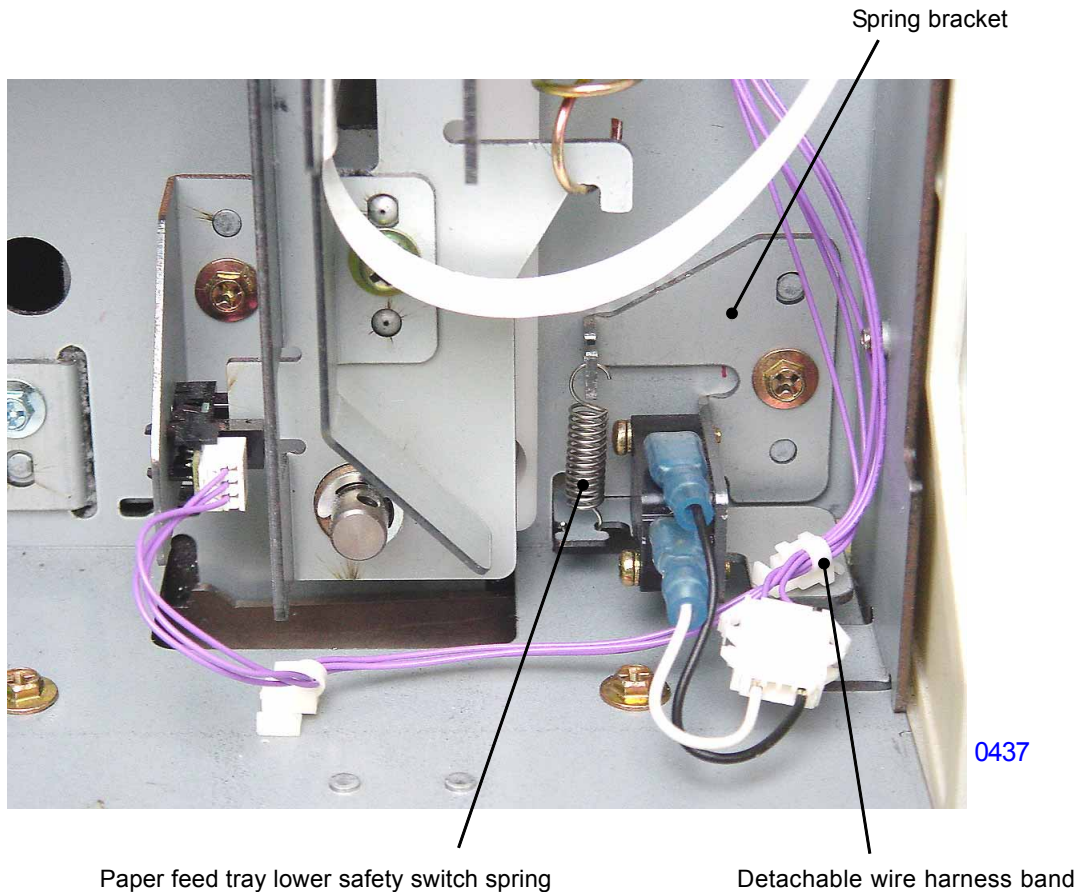
CAUTION: To prevent the paper feed tray from elevating up suddenly by the pull of the remaining spring, hold onto the paper feed tray when removing the elevator motor unit from the machine.

- (5) Remove a screw (M3x6: 1pc) and detach the elevator motor cover from the motor unit.
- (6) Unplug the connector, remove screws (M3x5: 2pcs), and detach the elevator motor from the unit.



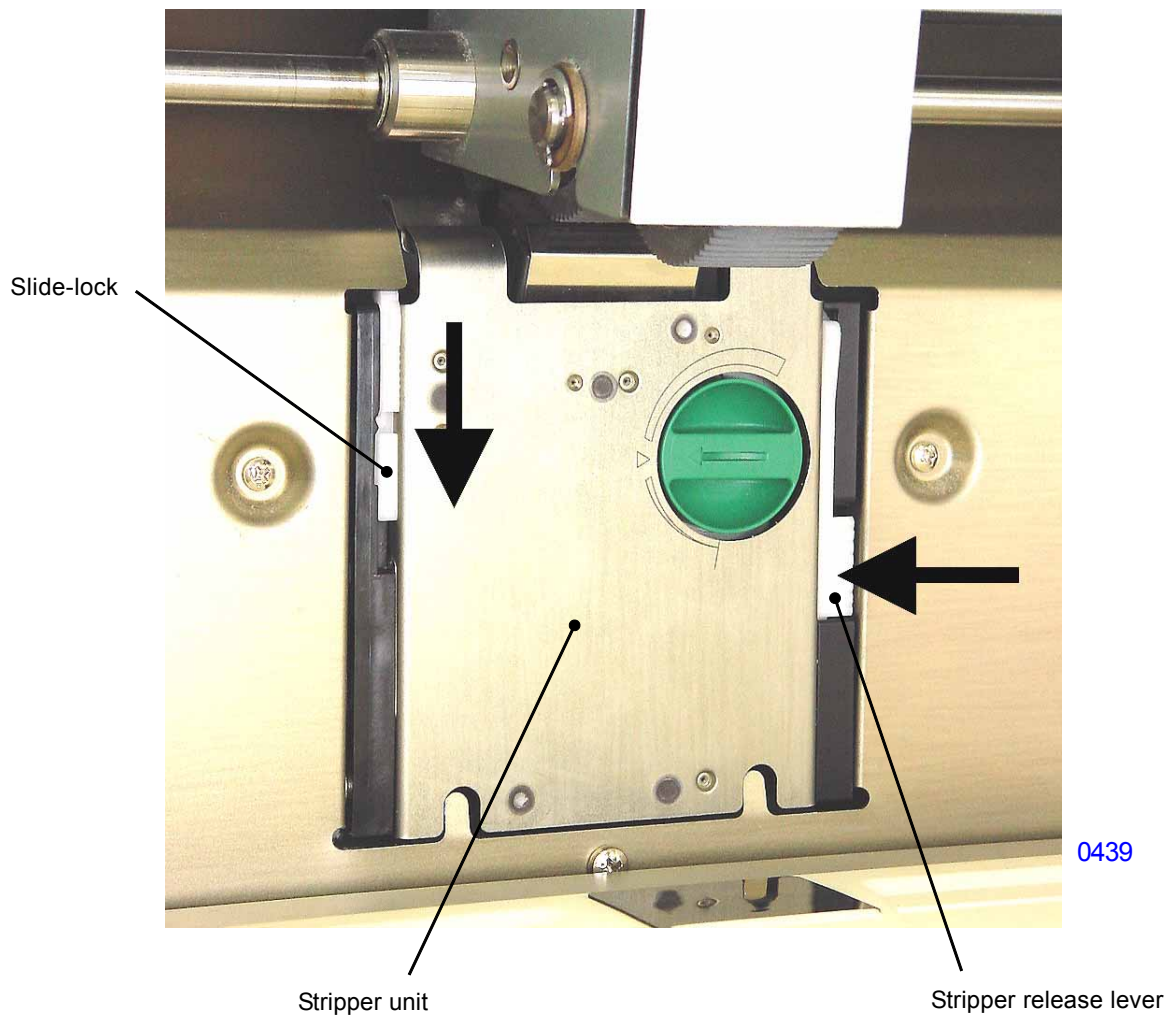
9. Removing the Paper Feed Tray Lower Safety Switch

- (1) Switch off the machine power and remove the rear cover.
- (2) Detach the paper feed tray lower safety switch spring.
- (3) Unplug the connector and detach the detachable wire harness band.
- (4) Remove a screw (M4x8: 1pc) and remove the switch together with the spring bracket.



10. Removing the Stripper Unit

- (1) Lower the paper feed tray all the way down and turn OFF the machine power.
- (2) Lower the slide-lock to release the lock on the stripper unit.
- (3) Push the stripper release lever and detach the stripper unit from the machine.

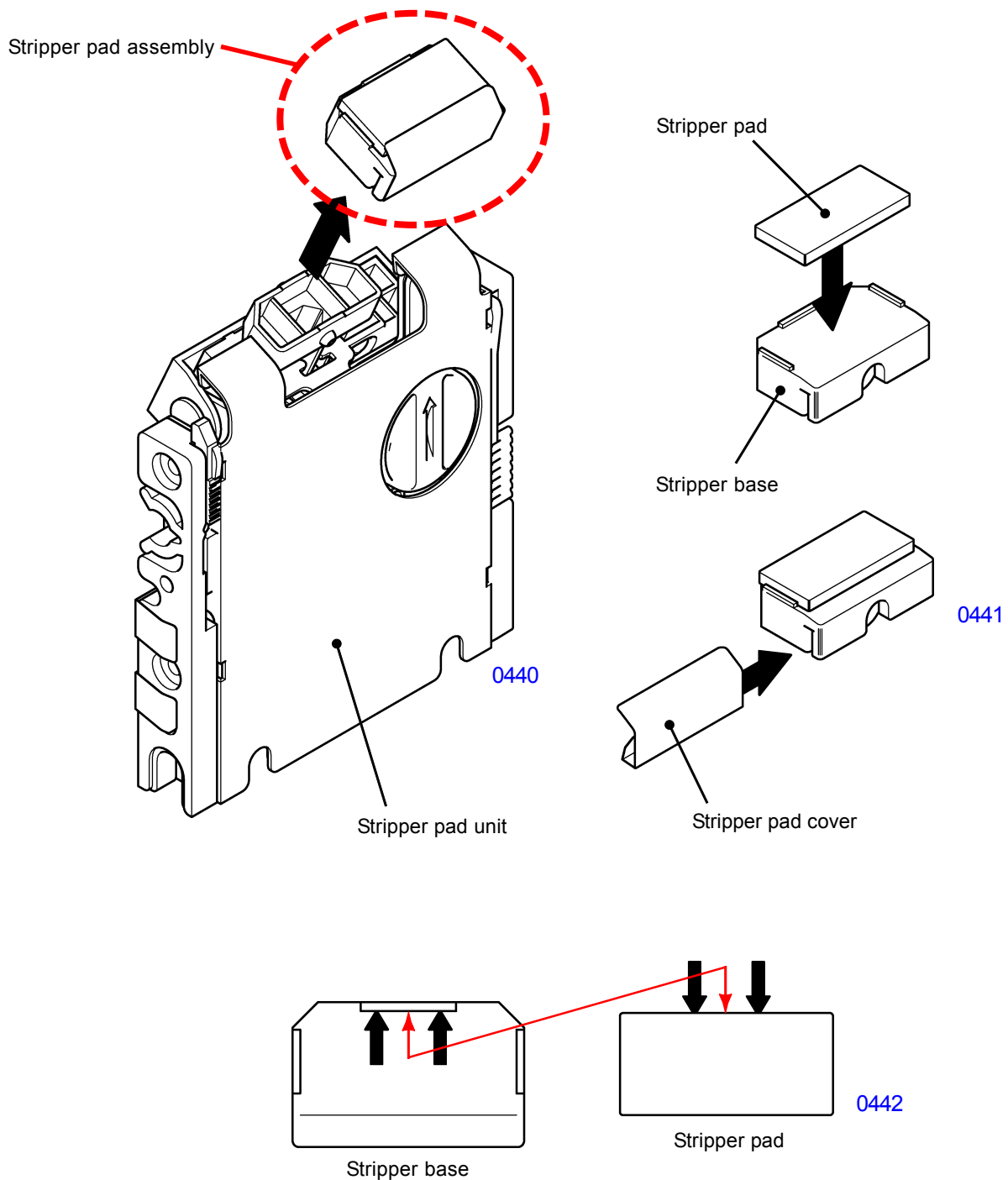


11. Removing the Stripper Pad Assembly

- (1) Lower the paper feed tray all the way down and turn OFF the machine power.
- (2) Remove the stripper unit.
- (3) Lift up the stripper pad assembly by hand and detach from the stripper unit.

<< Precaution in Assembly >>

- As shown on the sketch on the bottom, the arrow marked area on the stripper pad should meet firmly against the arrow marked area on the stripper base and press the stripper pad strongly onto the stripper base to allow the adhesive tape to stick firmly.



Adjustment

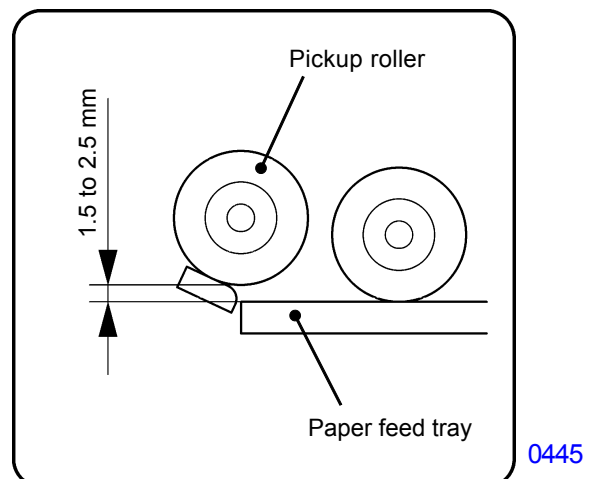
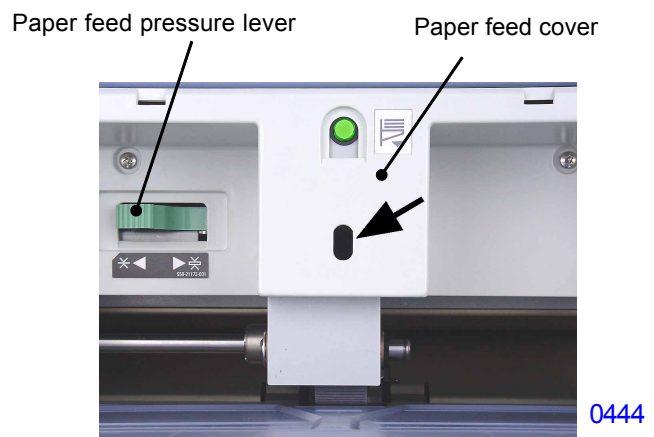
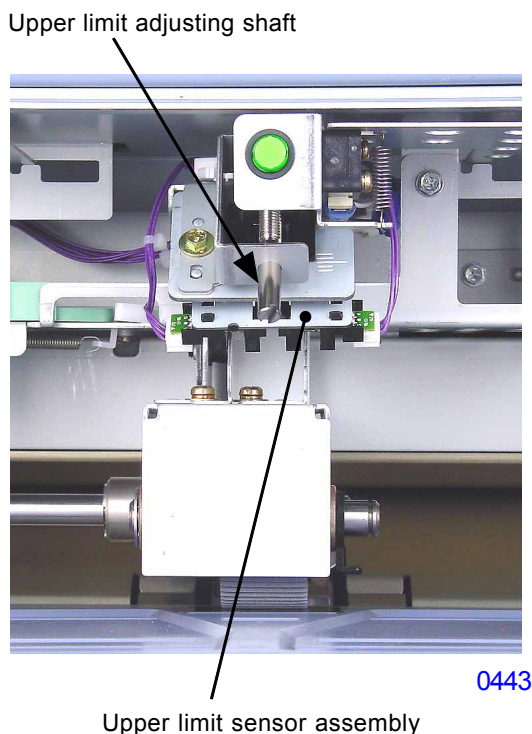
1. Upper Limit Sensor Position Adjustment

Adjustment

- (1) Remove papers from the paper feed tray, and slide the paper-feed pressure lever to "NORMAL".
 - (2) Start Test Mode No. 681 (paper feed tray upper limit positioning) to raise the paper feed tray and bring it to a complete stop.
 - (3) Check that the gap between the pickup roller and the paper feed tray is between 1.5 mm to 2.5 mm.
 - (4) If the gap is out of the specified range, rotate the upper limit adjusting shaft by inserting a flat head screw drive through the paper feed cover hole. Rotating the shaft will move the position of the upper limit sensor up or down.
- * If Test mode No.740 (paper limit position selection) is selected to "CARD" or "SPECIAL", make sure to select the test mode to "AUTO" or "NORMAL" before making the adjustment (RZ3 series).
 - * Rotating the upper limit adjusting shaft in clockwise direction lowers the upper limit sensor assembly and increases the gap between the pickup roller and paper feed tray.

Symptoms

If the upper limit sensor is positioned too high, the paper feed pressure increases too much and multiple sheets feeding may occur. On the other hand, if the sensor is positioned too low, the paper feed pressure reduces too much and no paper feed may occur.



2. Stripper Unit Adjustment

Adjustment

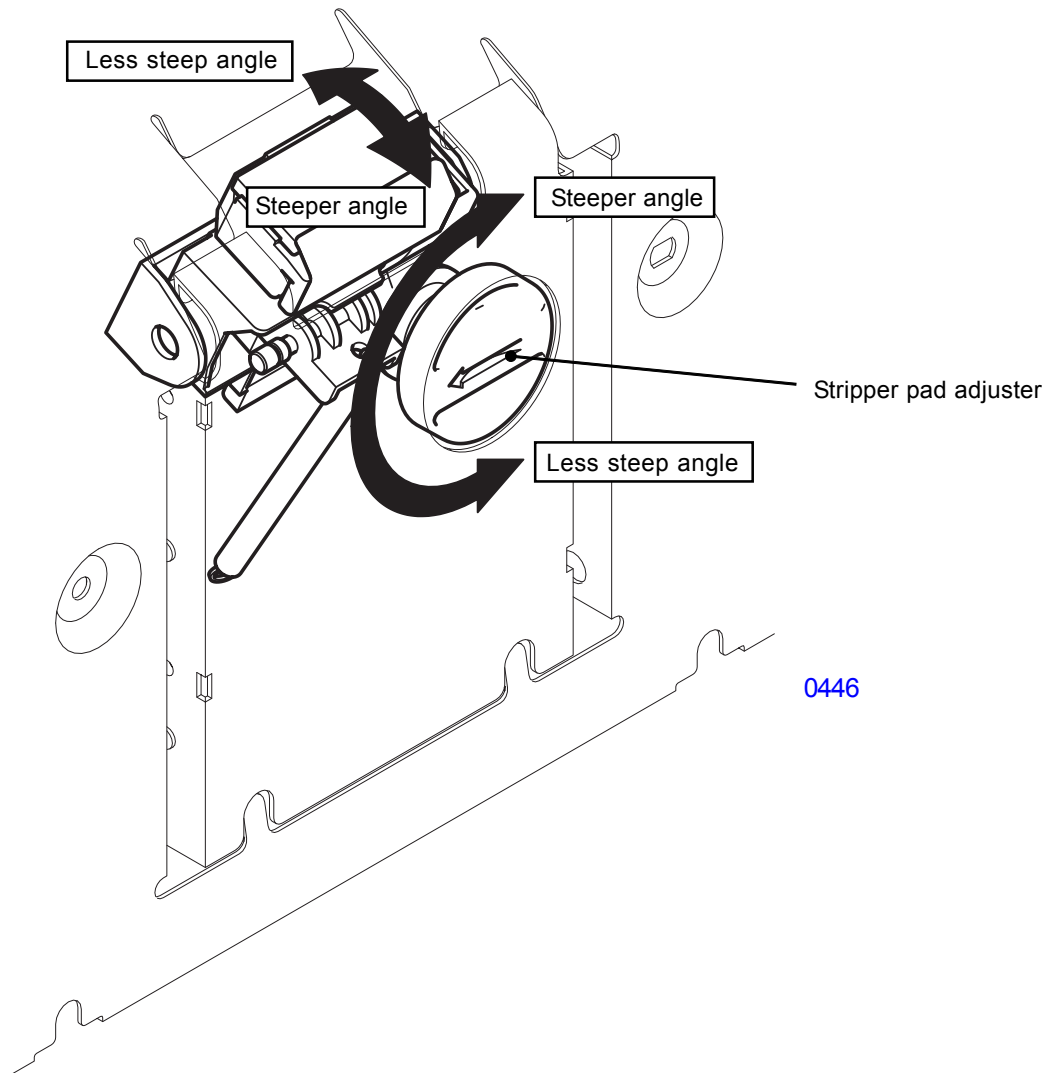
- (1) Slide the paper feed pressure adjust lever to the proper position to match the paper type before printing.
- (2) If multiple feeding or non-feeding occurs, adjust the stripper pad angle. (Make sure that the upper limit position is adjusted to the correct position before trying to solve the problem by adjusting the angle of the stripper pad.)

1) To solve [Multiple sheets feeding problem]:

Rotate the stripper pad adjuster clockwise to increase the stripper pad angle (pad angle becomes steep.)

2) To solve [No paper feed problem]:

Turn the stripper pad adjuster counterclockwise to reduce the stripper pad angle (pad angle becomes less steep.)



3. Paper-Feed Clutch ON Angle Adjustment

Checks and adjustment

- (1) Make prints to confirm whether the first paper feeding is smooth or not.
- (2) If the first paper feeding timing is not smooth, make adjustment using Test Modes to control the paper feeding clutch ON timing in accordance with the paper-type setting by the user Custom Setting Mode.

The test mode numbers are: 0741, 0761, 0764, 0767, 0770, and 0773.

- (3) Repeat from step (1) to check and make readjustment if necessary.

Symptoms

If the first paper feed timing is not correct, paper jamming or inconsistent print registration may occur.

4. Paper-Feed Clutch OFF Angle Adjustment

Checks and adjustment

- (1) Make prints to confirm whether the paper is smoothly transferred onto the second paper feed area.
- (2) If printing is not performed smoothly due to too much or too little buckling at the top of the paper, make adjustment using paper feed clutch OFF angle adjustments by Test Modes in accordance to the paper type setting by the user Custom Setting Mode.

The test mode numbers are: 0742, 0762, 0765, 0768, 0771, and 0774.

- (3) Repeat from step (1) to check and make readjustment if necessary.

Symptoms

If the buckle is too small or too large, the paper may not feed into the second paper feed area correctly, and paper jam may occur.

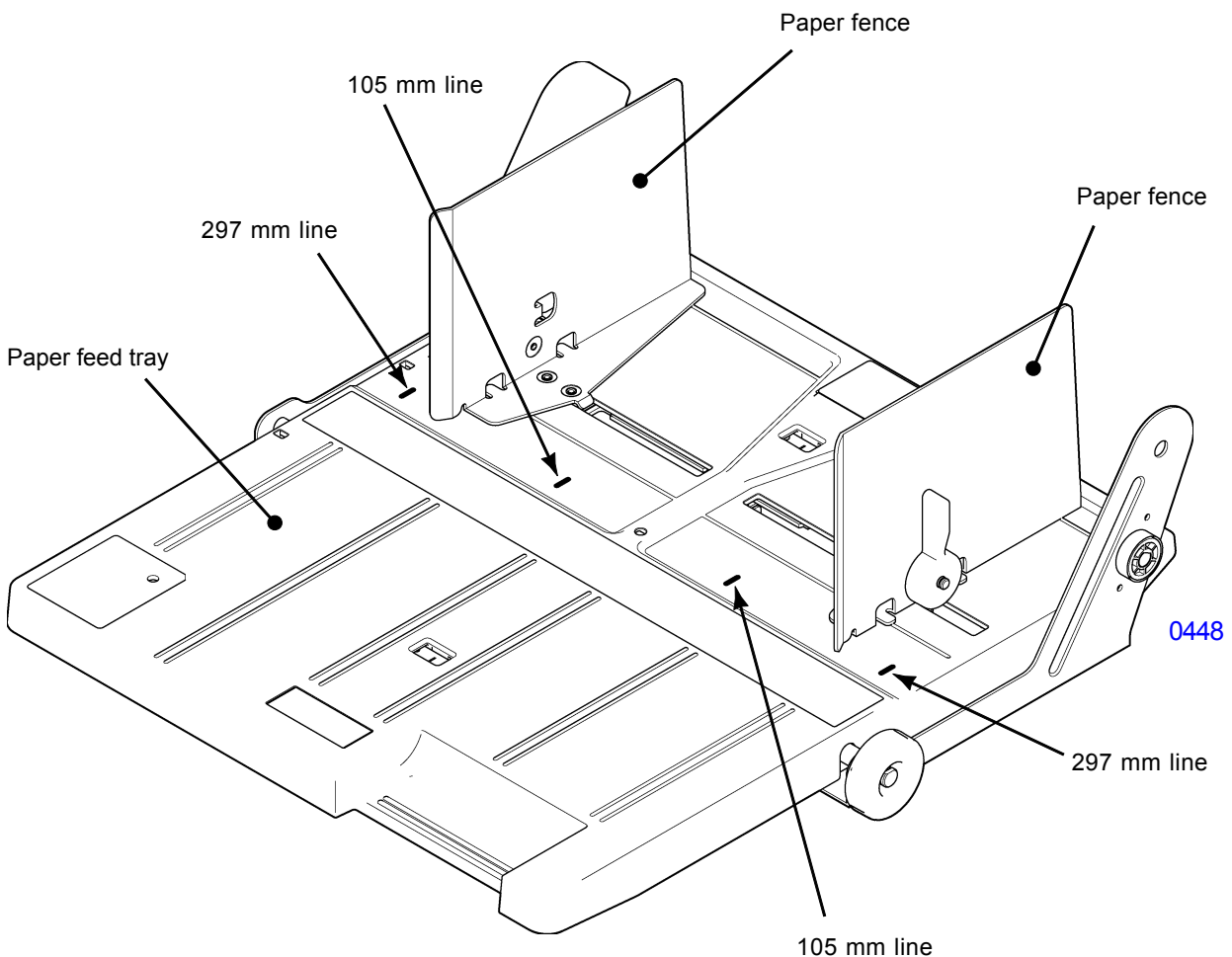
5. Paper-Width Potentiometer Adjustment

Checks and adjustment

- (1) Access into protected area test mode by activating Test Mode No. 9874.
 - (2) Set the paper fence to the 105mm line on the paper feed tray, and run Test Mode No.1102.
 - (3) Set the paper fence to the 297mm line on the paper feed tray, and run Test Mode No.1103.
 - (4) Set the paper fence to the 105mm line on the paper feed tray, and run Test Mode No.721 to confirm whether the adjustment ended correctly or not. Confirm that the display shows a value between 1020 and 1080 (1050 plus/minus 30). If not, repeat the adjustment from the beginning.
 - (5) With Test Mode still in No.721, set the fence position to 297mm, and make sure the indication shows a value between 2940 and 3000 (2970 plus/minus 30). If not, repeat the adjustment from the beginning.
- ✱ When setting the fence to the given width for above adjustments, make sure to close the fence inward to the given width. Do not set to the given width by opening the fence. The fence must be moved inward.

Symptoms

If the adjustment is incorrect, the machine judges the paper on the tray to be in a different size. This would result in either reduced master-making area, or increased master-making area.



MEMO

CHAPTER 5: SECOND PAPER FEED SECTION

Contents

MECHANISM

- 1. Second Paper Feed Mechanism 5-2
- 2. Vertical Print Position Control 5-4

DISASSEMBLY

- 1. Removing the Guide Roller 5-6
- 2. Removing the Paper Sensor 5-7
- 3. Removing the Timing Roller 5-8
- 4. Removing the Vertical Centering Sensor 5-10
- 5. Removing the Print-positioning Intermediate Gear 5-11
- 6. Removing the Idler Gear 5-12
- 7. Removing the Paper Feed Drive Unit 5-13
- 8. Removing the Print Positioning Pulse Motor 5-16

ADJUSTMENT

- 1. G-lever Mounting Position Adjustment 5-17
- 2. Paper Feed Skew Adjustment 5-18
- 3. Print Start Position Adjustment 5-19

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Mechanism

1. Second Paper Feed Mechanism

During the printing, the sector gear cam and timing cam rotate in counterclockwise direction.

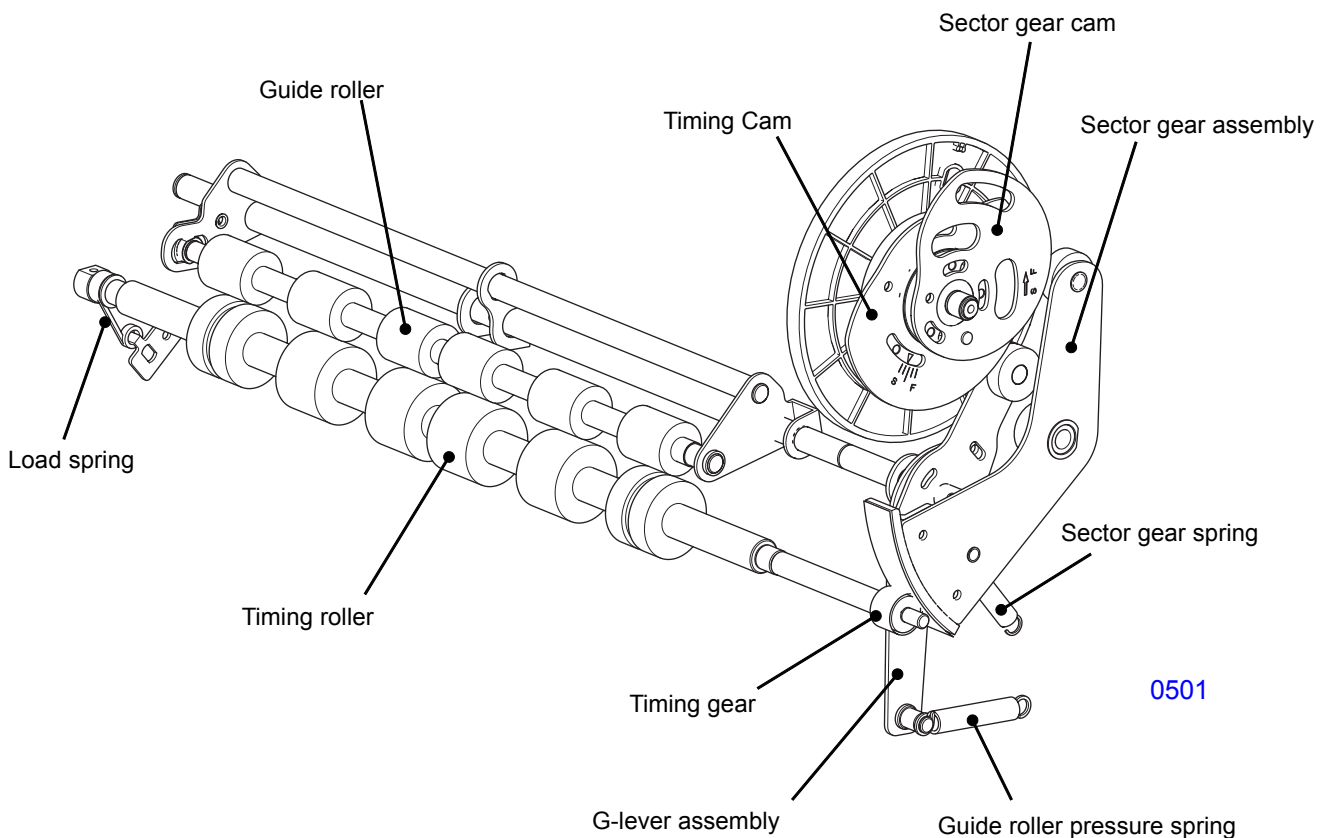
The pull of the sector gear spring pushes cam follower on the sector gear assembly against the sector gear cam. Riding on the sector gear cam, the sector gear assembly makes pendulum (swinging) action when the sector gear cam rotates. The sector gear transfers the drive to the timing gear. The timing gear has a built-in clutch to drive the timing roller only when the gear rotates in the counterclockwise direction by the clockwise swing of the sector gear. Due to the one-way clutch on the timing gear, the timing roller stays stationary when the sector gear swings in the counterclockwise direction to rotate the timing gear in the clockwise direction.

To ensure that the timing roller stops instantly when the timing gear ends its counterclockwise rotation, a load spring is mounted on the operators side of the timing roller to apply a brake on the timing roller.

The guide roller receives its rotation drive directly from the timing roller. The guide roller pressure spring pulls the guide roller down against the timing roller to make the contact. When in contact, the guide roller makes its rotation only when the timing roller rotates. When the timing cam pushes the G-lever down, the guide roller rises and releases the contact with the timing roller.

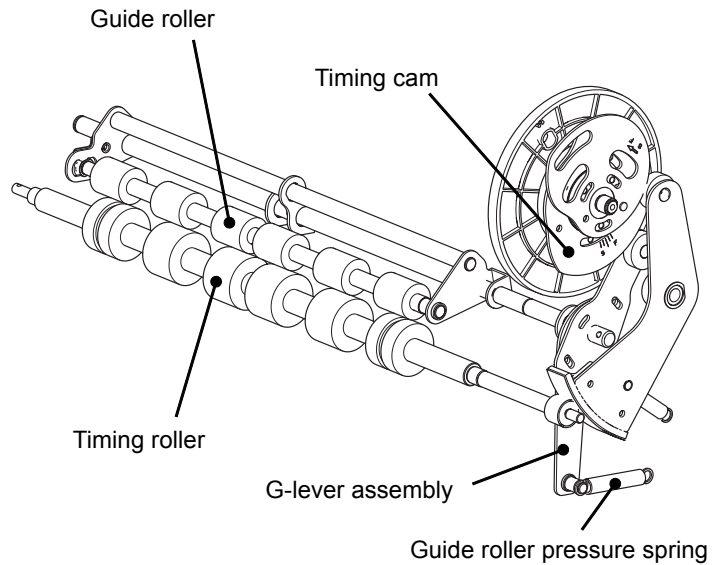
During the printing, as the first paper feed area sends the paper onto the second paper feed area, the guide roller is in contact with the timing roller and stationary. As the paper arrives, both the timing roller and guide roller rotate to pinch the paper in between and transfers the paper onto the print drum area for printing.

During the printing, as the rotation of the timing roller ends, the guide roller elevates up to disengage from the timing roller to let the paper go through into the printing area freely without any drag.

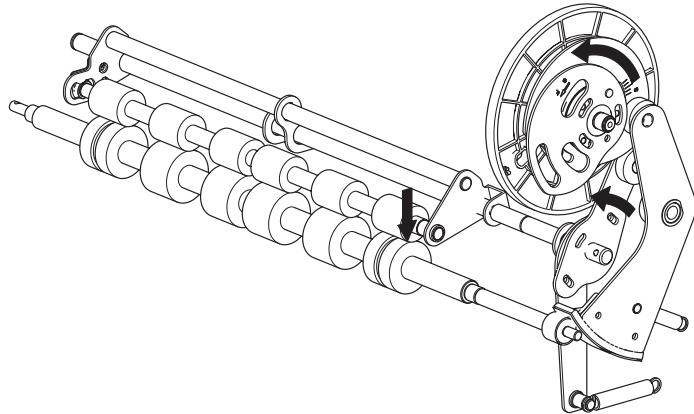


At print drum Position-A

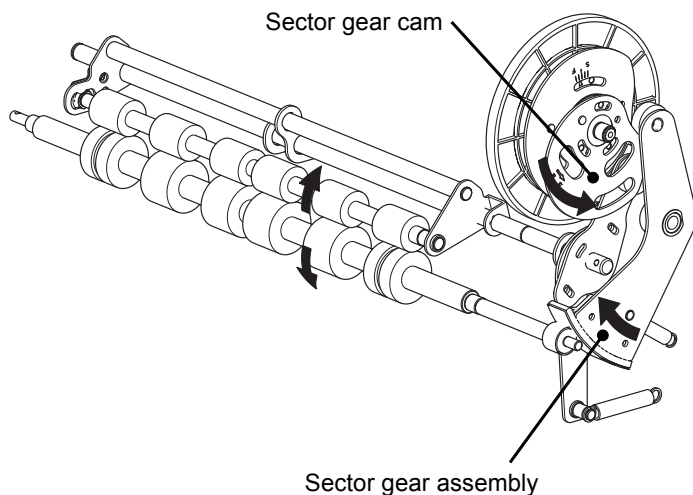
When the print drum comes to its position-A, the G-lever is pushed down by the timing cam and the guide roller is raised up. The guide roller is disengaged from the timing roller.

**First paper feed starts**

When the first paper feed starts by the rotation of the rotation of the scraper roller and pickup roller, the leading edge of the paper arrives to the second paper feed area, between the At this point, the timing cam no longer pushes the G-lever and the guide roller pressure spring pulls the guide roller down against the timing roller, reventing the paper to go any further into the machine.

**Second paper feed starts**

When the first paper feed operation ends, the rotation of the sector gear cam swings the sector gear assembly in the clockwise direction. The clockwise swing of the sector gear drives the timing roller. The timing roller drives the guide roller with the paper clamped in between, sending the paper onto the printing area.

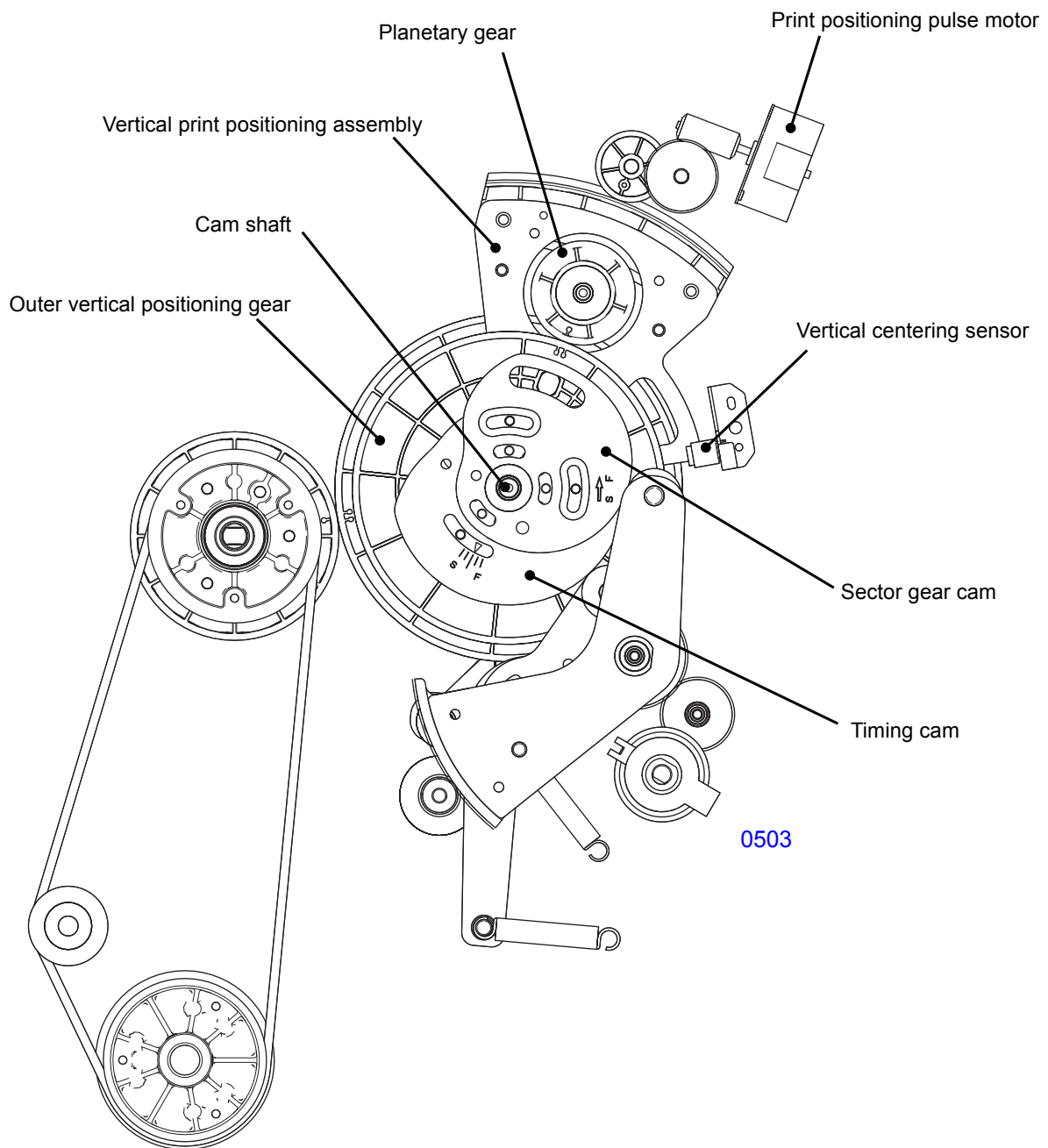


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2. Vertical Print Position Control

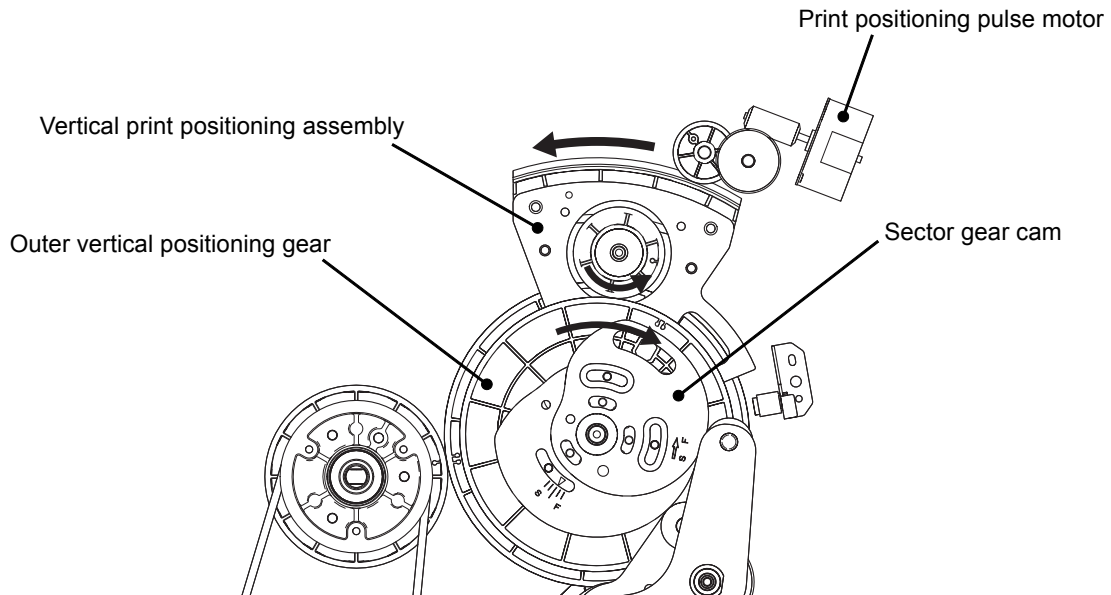
Pressing the ◀ or ▶ button of the print position key on the operation panel activates the print positioning pulse motor. The rotation of the pulse motor swings the vertical print positioning assembly either to the clockwise or counterclockwise direction with the pivot on the cam shaft. The movement of the vertical print positioning assembly rotates the planetary gear. The planetary gear then rotates the outer vertical positioning gear. The rotation of the outer vertical positioning gear offsets the position of both the timing cam and sector cam against the print drum, causing the vertical print position on the paper to change.

The vertical default (home) position is checked by the vertical centering sensor.



Pressing the ► key on the panel (print image up)

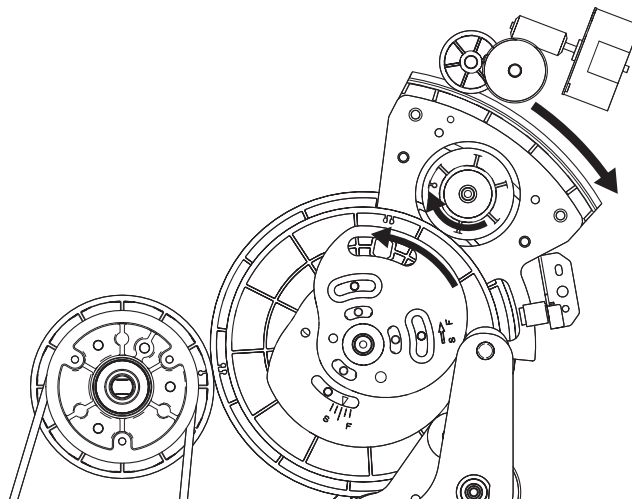
When the ► key is pressed, the print positioning pulse motor moves the vertical print positioning assembly in the counterclockwise direction and the outer vertical positioning gear in the clockwise direction. The sector gear cam, which is screwed onto the outer vertical positioning gear, also changes its position in clockwise direction together with the outer vertical positioning gear. Noting that the outer vertical positioning gear and sector gear cam rotates in the counterclockwise direction during the printing, the sector gear cam shifted clockwise from the default position delays the timing of the timing roller to start its rotation. The timing of the paper feeding into the printing area delays and the print position on the paper goes up.



0504

Pressing the ◀ key on the panel (print image down)

When the ◀ key is pressed, the print positioning pulse motor moves the vertical print positioning assembly in the clockwise direction and the outer vertical positioning gear in the counterclockwise direction. The sector gear cam, which is screwed onto the outer vertical positioning gear, also changes its position in counterclockwise direction together with the outer vertical positioning gear. Noting that the outer vertical positioning gear and sector gear cam rotates in the counterclockwise direction during the printing, the sector gear cam shifted counterclockwise from the default position quickens the timing of the timing roller to start its rotation. The timing of the paper feeding into the printing area starts early and the print position on the paper goes down.

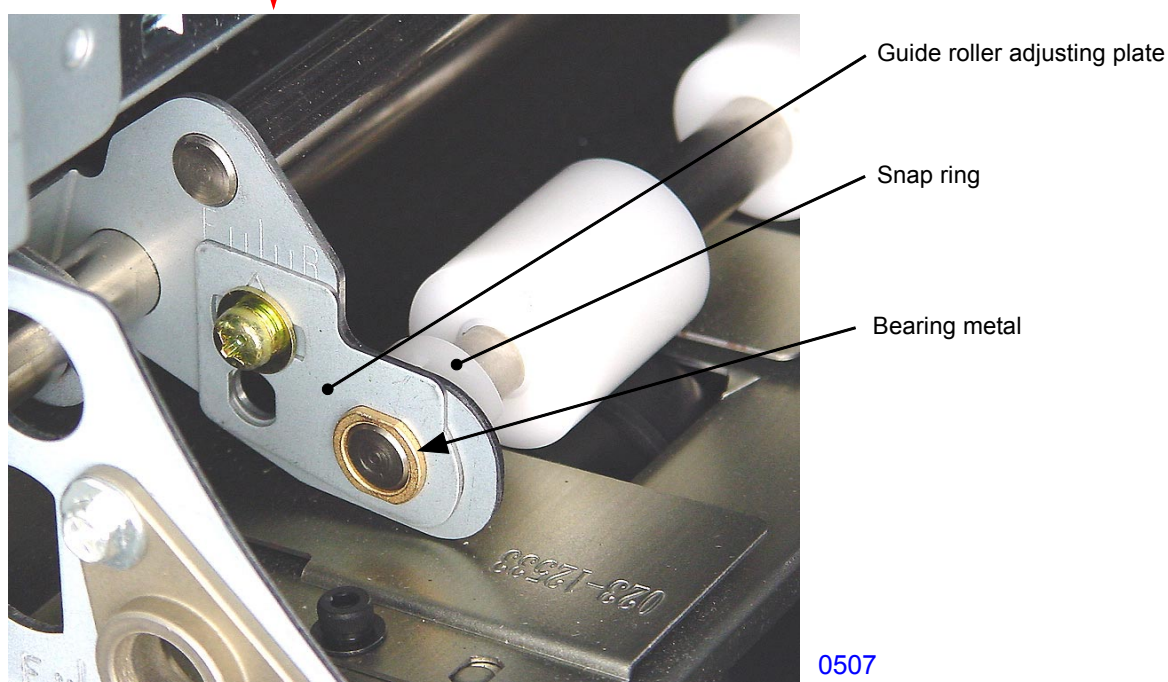
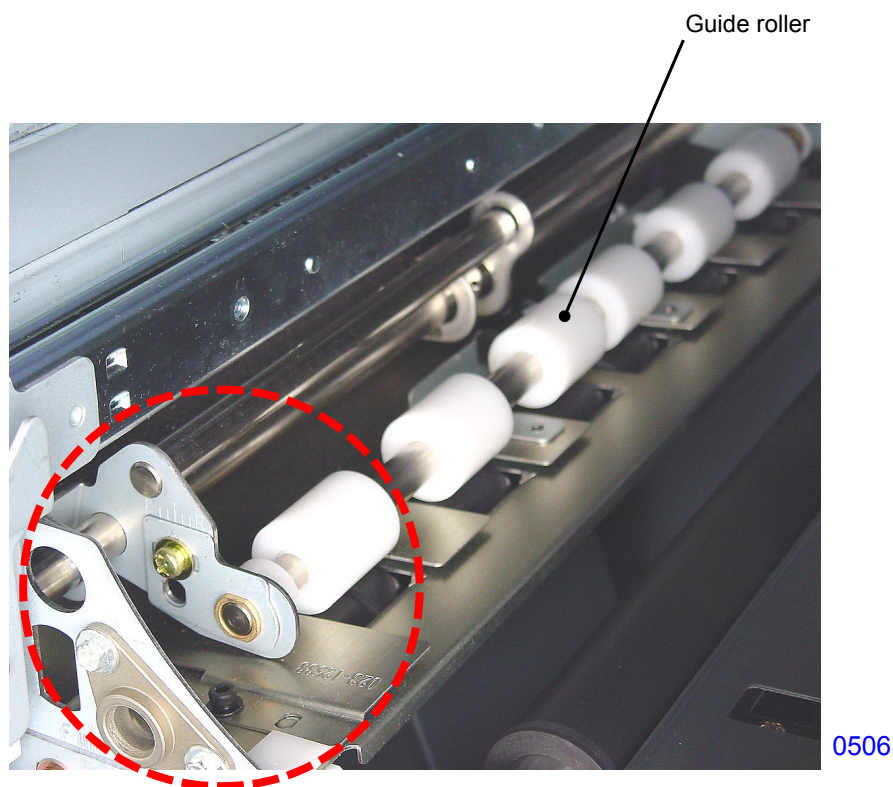


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Disassembly

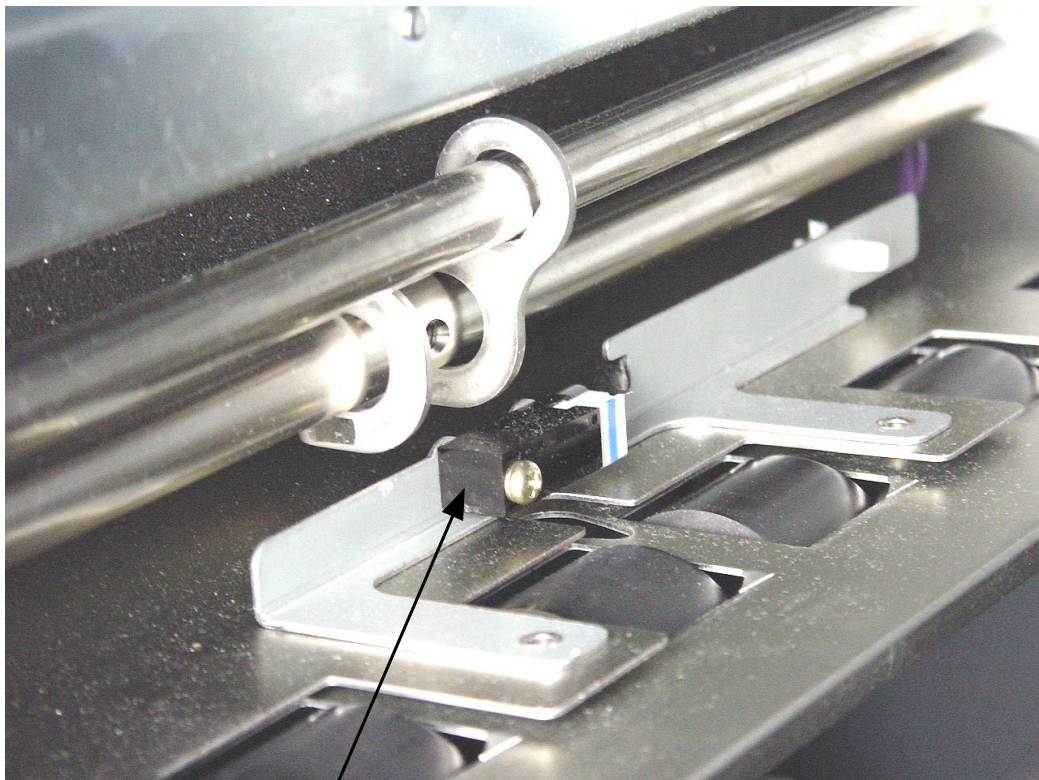
1. Removing the Guide Roller

- (1) Pull out the print drum and switch off the machine power.
- (2) From the opening on the machine for the print drum, remove the snap ring. Then remove the bearing metal from the guide roller adjusting plate to free the guide roller out of the machine.



2. Removing the Paper Sensor

- (1) Pull out the print drum and switch off the machine power.
- (2) Remove the guide roller.
- (3) Remove a screw (M3x14: 1pc), and unplug the connector to remove the paper sensor.



0508

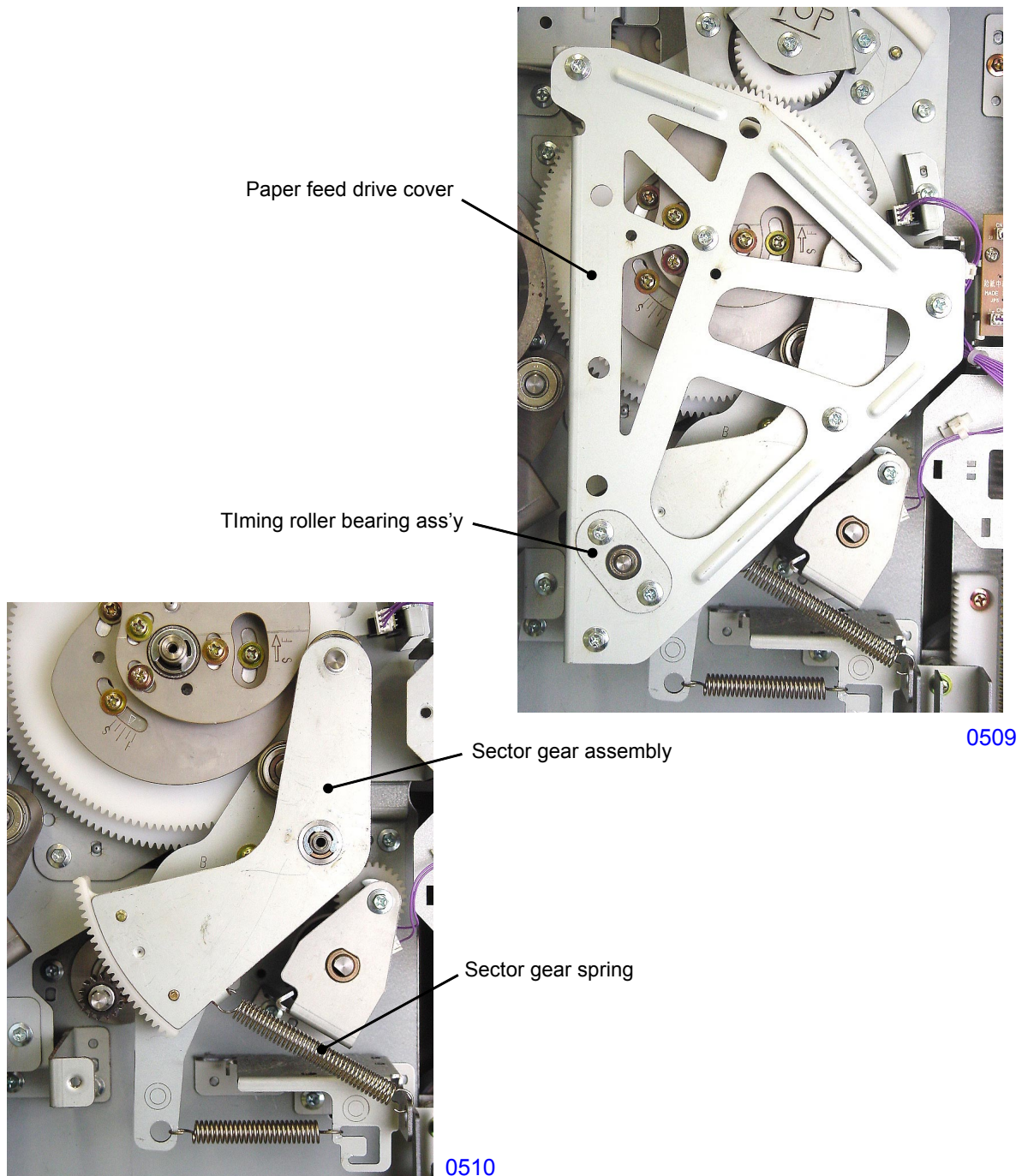
Paper sensor

3. Removing the Timing Roller

- (1) Pull out the print drum and switch off the machine power.
- (2) Remove the rear cover.

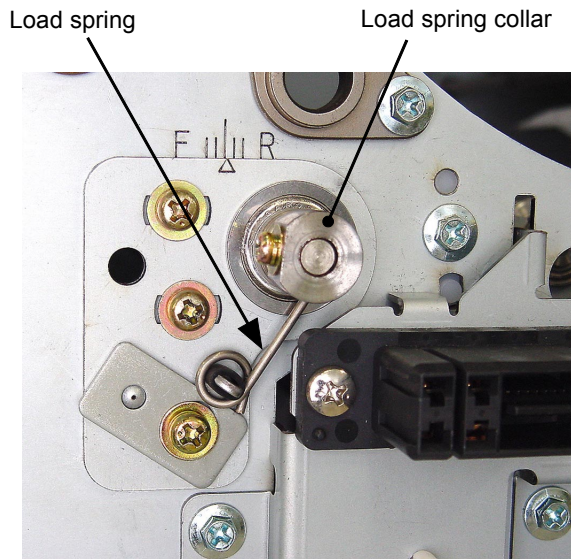
<< Working on the rear of the machine >>

- (3) Open the PCB support plate of the power supply PCB and mechanical control PCB.
- (4) Remove the timing roller bearing assembly (M4x8: 2pcs)
- (5) Remove the paper feed drive cover. (M4x8: 5pcs)
- (6) Remove the sector gear spring.
- (7) Detach the sector gear assembly by removing the E-ring.

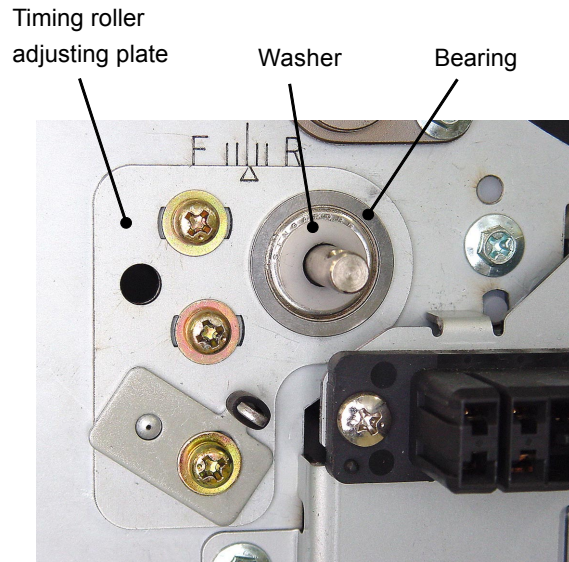


<< Working on the front of the machine >>

- (8) Remove screw (M3x8: 1pc) from the load spring collar. Then remove load spring and load spring collar.
- (9) Remove the washer, and also the bearing from the timing roller adjusting plate.



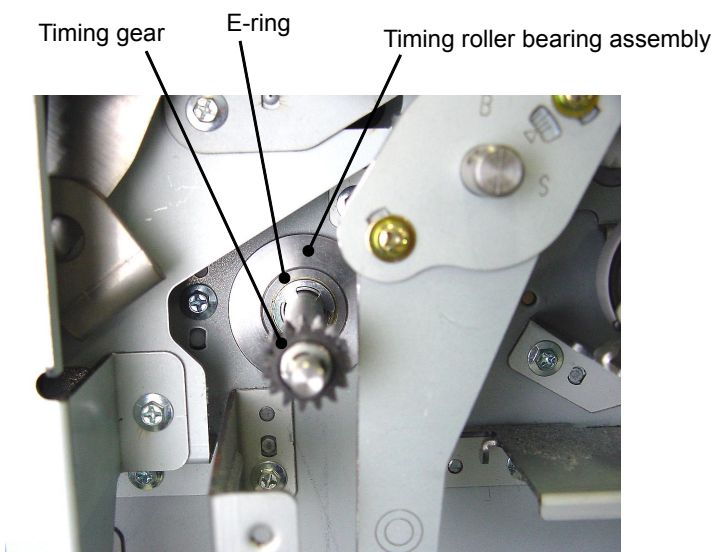
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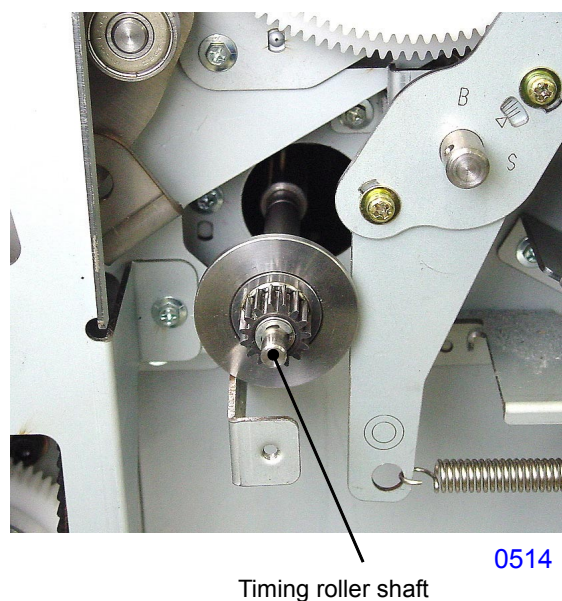
0512

<< Working on the rear of the machine >>

- (10) Remove the E-ring, and disengage the timing roller bearing assembly from the machine rear frame. Then pull the bearing assembly out until it touches the timing gear.
- (11) Grab the timing roller shaft behind the timing roller bearing assembly with one hand and front of the bearing assembly by another hand, and pull out the timing roller out from the opening on the rear frame of the machine.



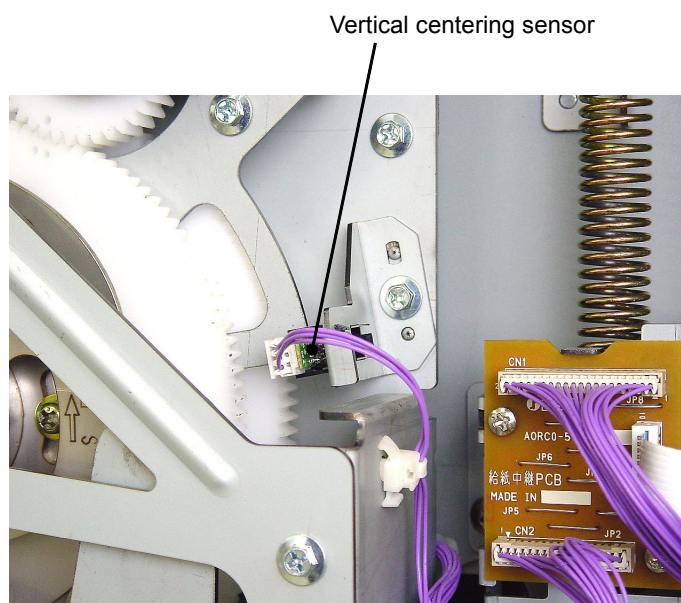
0513



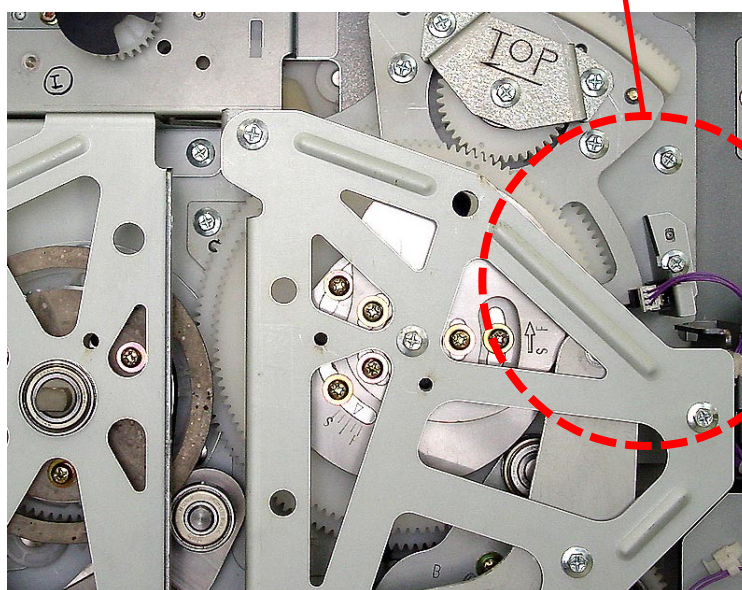
0514

4. Removing the Vertical Centering Sensor

- (1) Switch off the machine power and remove the rear cover.
- (2) Unplug the sensor connector, and by removing a screw (M4x8: 1pc), detach the vertical centering sensor off the machine together with the sensor bracket.



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5. Removing the Print-positioning Intermediate Gear

- (1) Switch off the machine power and remove the rear cover.
- (2) Remove the E-ring and detach the print-positioning intermediate gear.

<< Precaution on Reassembly >>

Mount the print-positioning intermediate gear back on the machine after inserting the 8mm diameter Jig shaft into the position-B phase alignment hole on the paper feed area so all other gears are aligned in position-B.



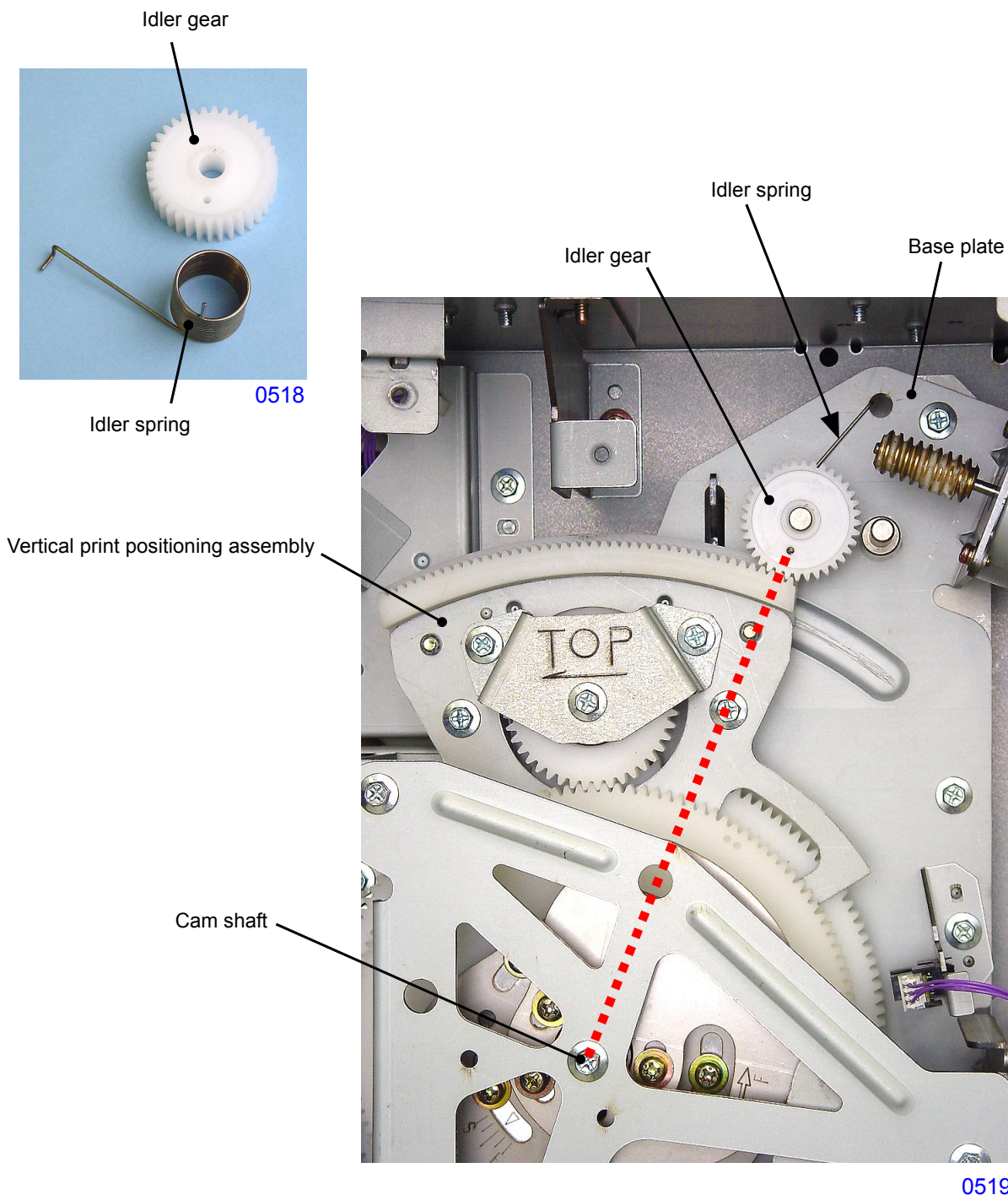
0517

6. Removing the Idler Gear

- (1) Switch off the machine power and remove the rear cover.
- (2) Remove the print-positioning intermediate gear.
- (3) Remove E-ring and remove the idler gear together with the idler spring by unhooking the spring from the base plate.

<< Precaution on Reassembly >>

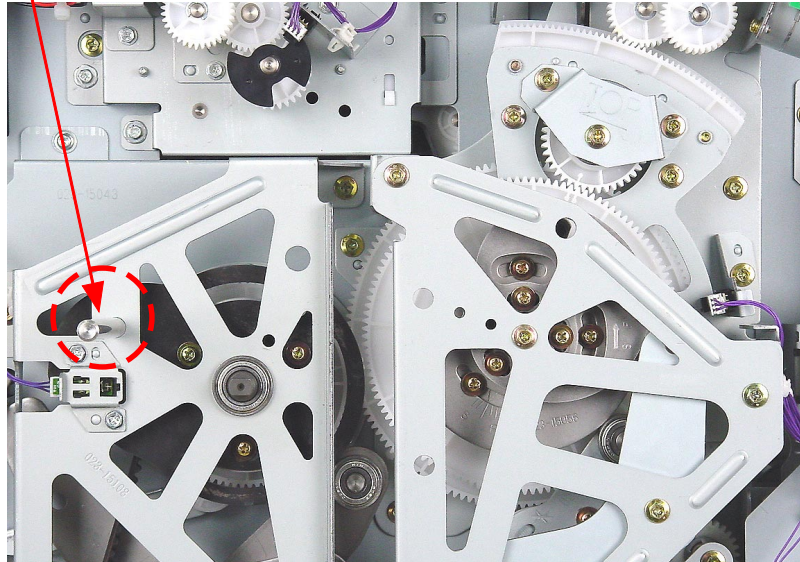
Insert the shorter end of the idler spring into the idler gear. Then swing the vertical print positioning assembly in the counterclockwise direction until it stops. Mount the idler gear with the small hole on the gear positioned down and the hole aligned in straight line with the center of the cam shaft. Finally hook the longer end of the idler spring onto the hole on the base plate.



7. Removing the Paper Feed Drive Unit

- (1) Switch off the machine power, remove the rear cover, and then swing open the PCB bracket of the power supply and mechanical control PCB.
- (2) Insert jig (8mm dia.) into the position-B phase alignment hole on the main shaft assembly of the main drive.

Jig shaft (8 mm dia.) inserted into position-B phase alignment hole on the main shaft assembly.

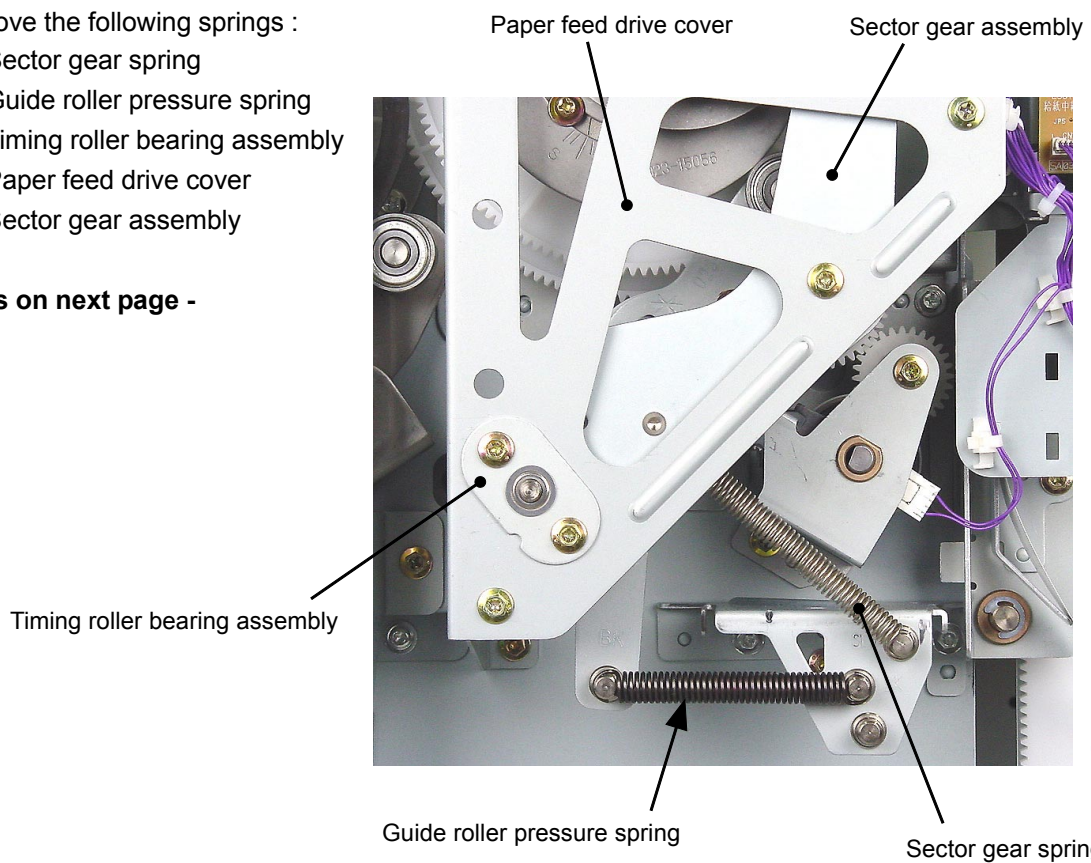


0520

- (3) Remove the following springs :

- Sector gear spring
- Guide roller pressure spring
- Timing roller bearing assembly
- Paper feed drive cover
- Sector gear assembly

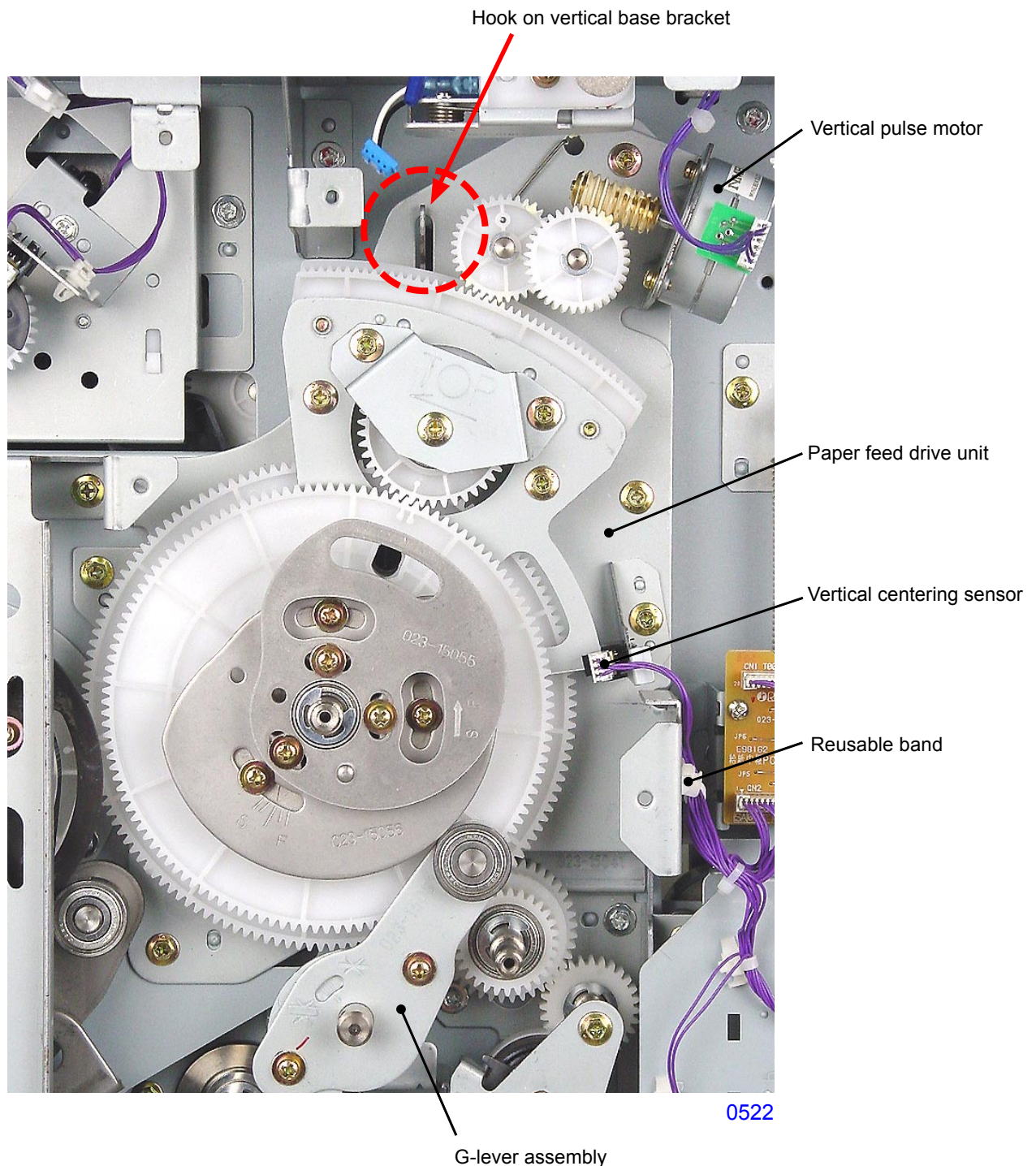
- Continues on next page -



0521

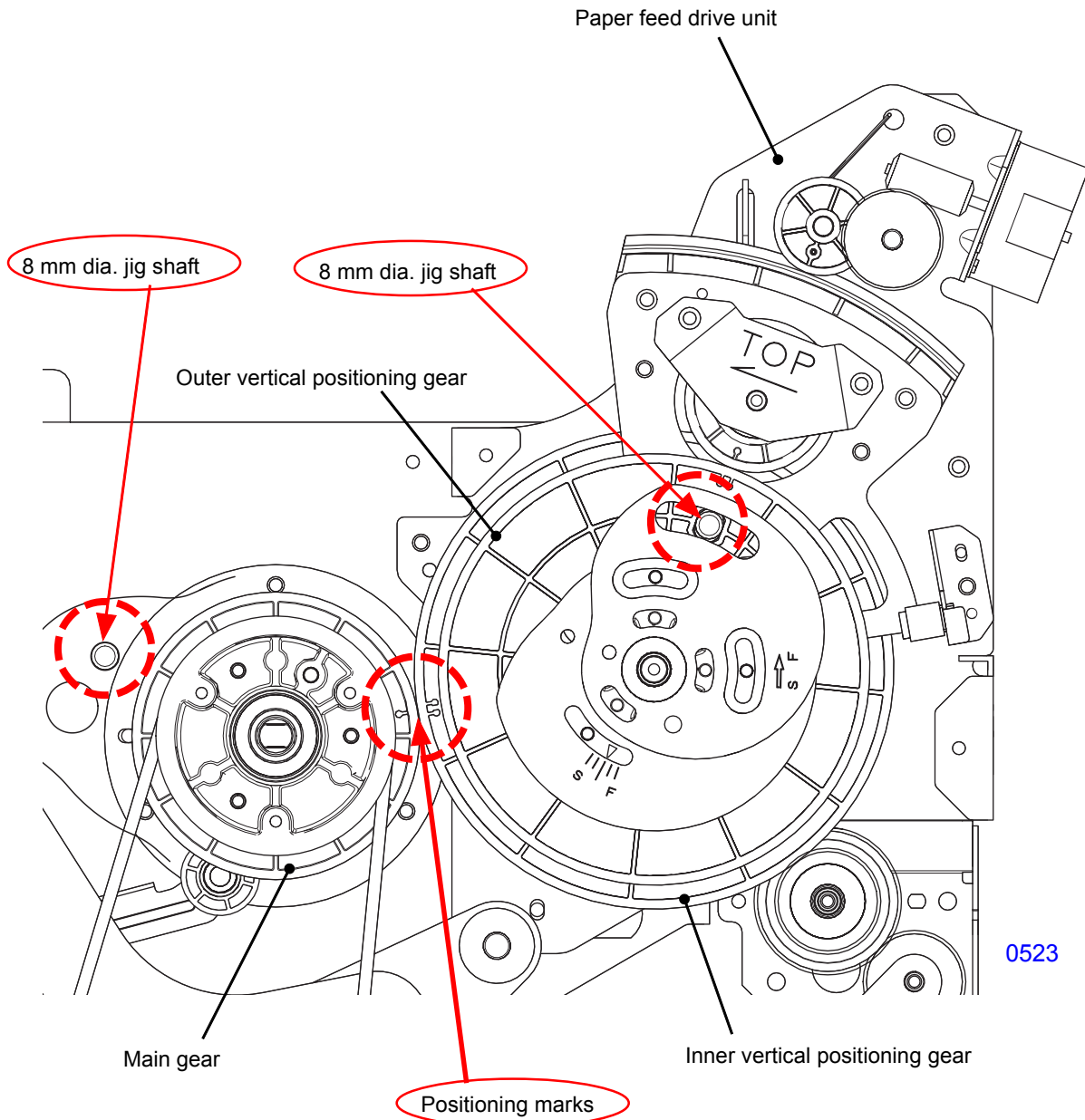
- (4) Unplug the connector of the print positioning pulse motor.
- (5) Unplug the connector of the vertical centering sensor, and unhook the reusable band.
- (6) Remove screws (M4x8: 4pcs) of the paper feed drive unit.
- (7) Unhook the paper feed drive unit from the machine while rotating the G-lever assembly to the right by hand, making a way for the unit to come out, remove the unit from the machine.

- Precaution on assembly continues on next page -



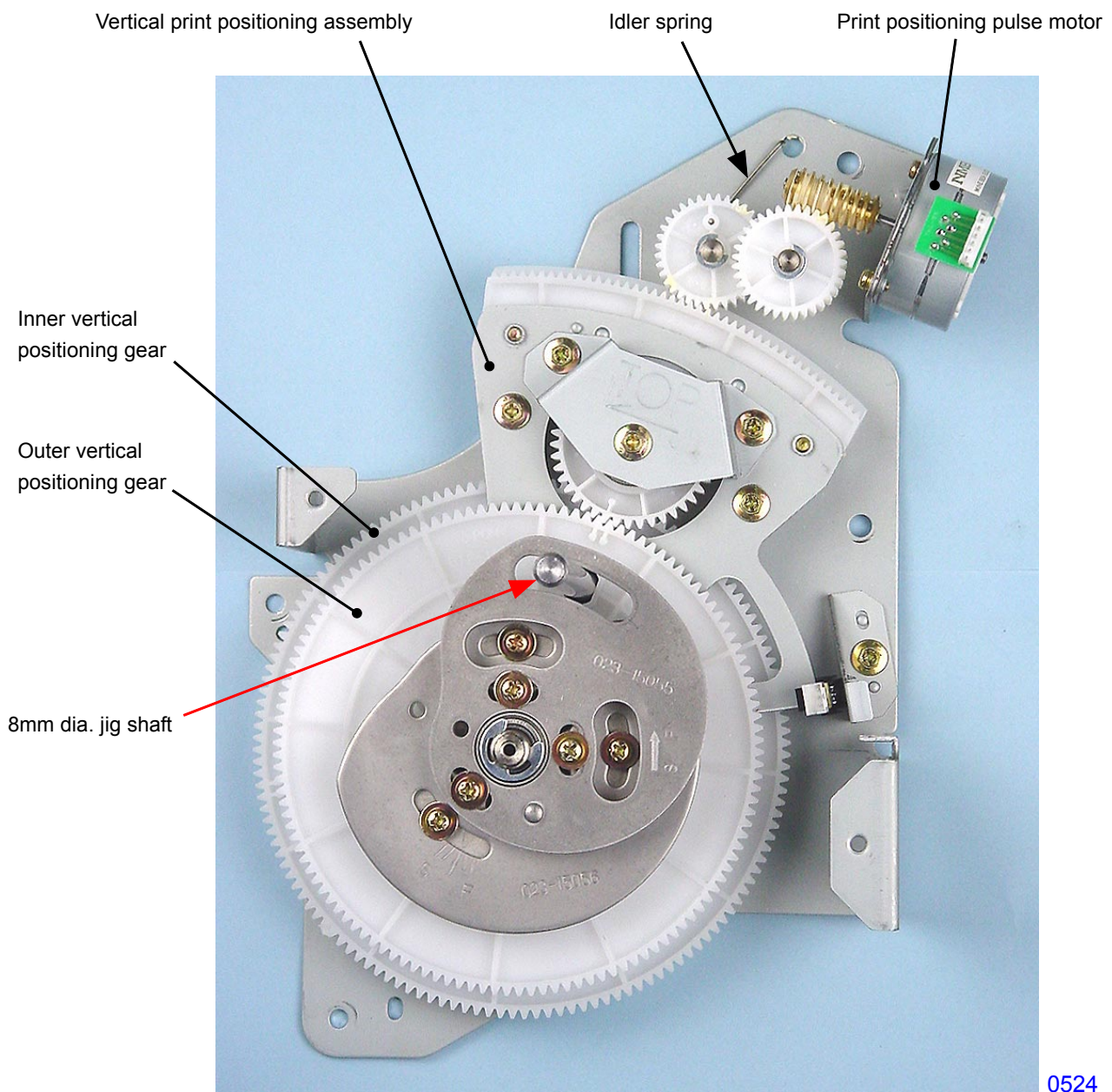
<< Precaution on assembly >>

Mount the paper feed drive unit on the machine so that one positioning mark on the main gear aligns in between the two positioning marks on the inner vertical positioning gear, making sure that 8mm diameter jig shafts are inserted into the position-B phase alignment holes on the main drive and paper feed drive area to align all to the machine position-B.



8. Removing the Print Positioning Pulse Motor

- (1) Switch off the machine power, remove the rear cover, and swing open the PCB bracket of the power supply and mechanical control PCBs.
- (2) Remove the paper feed drive unit from the machine.
- (3) To prevent the idler spring from moving the vertical print positioning unit, insert 8mm diameter jig shaft into the position-B phase alignment hole on the paper feed drive unit. (The jig shaft holes on the outer and inner vertical positioning gears meet every 5 turns of the inner vertical positioning gear.)
- (4) Remove screws (M3x6: 2pcs) and remove the vertical pulse motor.



0524

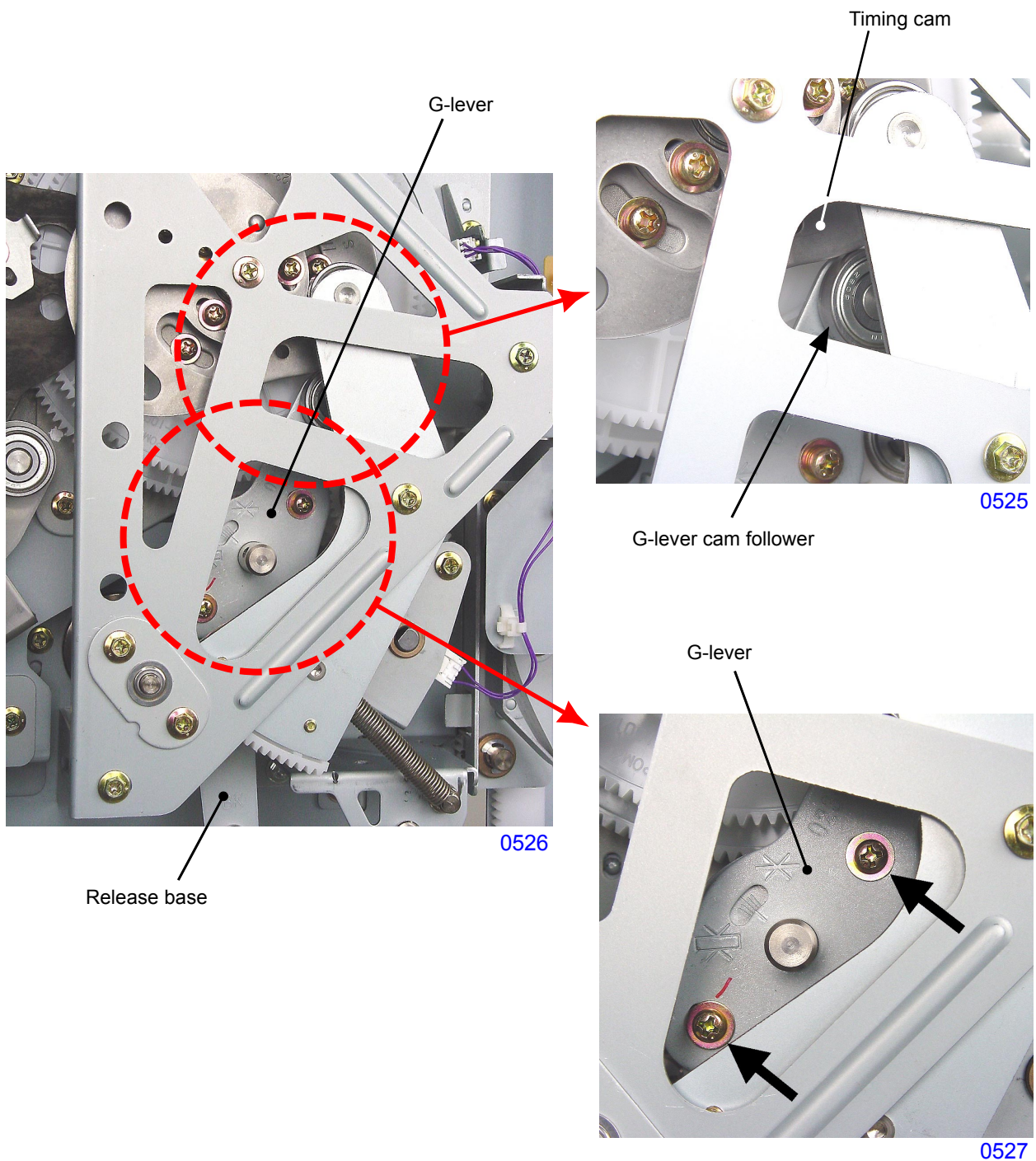
< Paper Feed Drive Unit >

Adjustment

1. G-lever Mounting Position Adjustment

Checks and adjustment

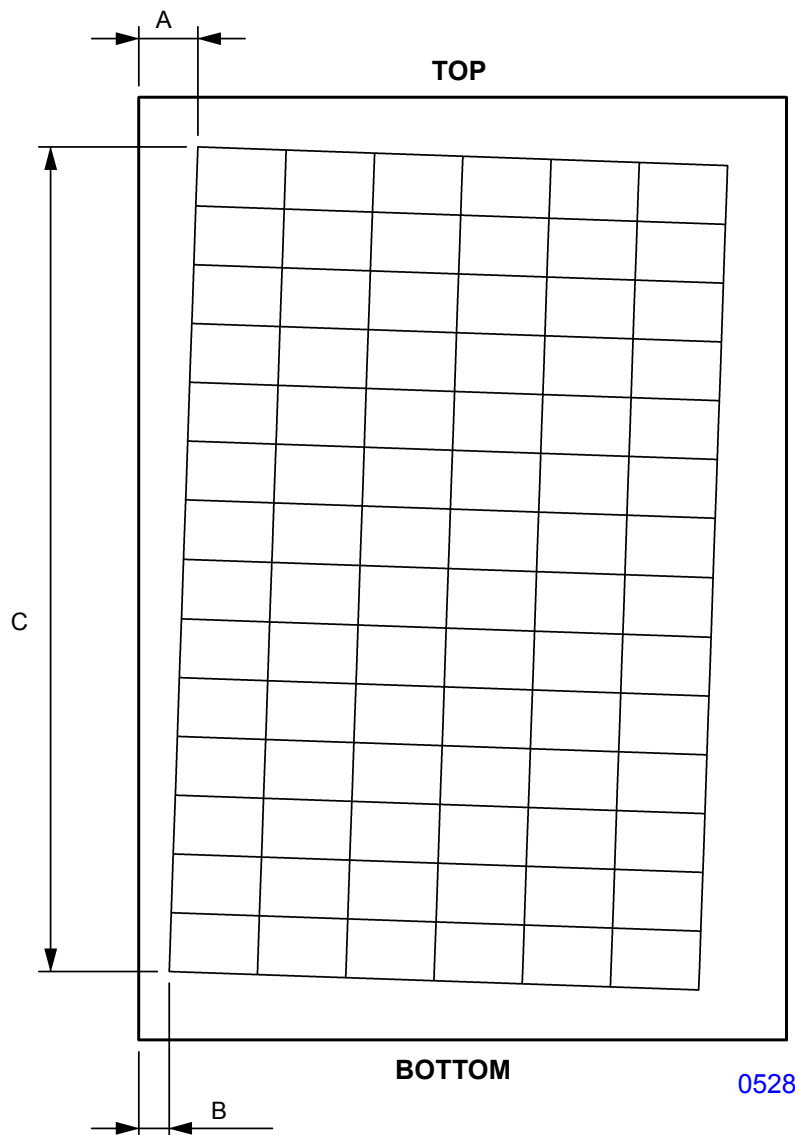
- (1) Run Test mode No.889 (G-Lever mounting position) and then switch off the machine power.
- (2) Remove the rear cover.
- (3) Loosen the two screws on the G-lever assembly, joining the G-lever and release base in one piece.
- (4) Push the G-lever cam follower against the timing cam and retighten the two screws, making sure that the cam follower is touching the cam.



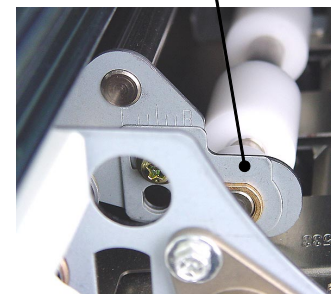
2. Paper Feed Skew Adjustment

Checks and adjustment

- (1) Load A3-size papers on the paper feed tray, run Test mode No. 81 to make cross-line image, and make 5 prints, and use the 5th print to check.
 - (2) Measure the distance (A) from the left edge of the paper to the first vertical line at the top of the sheet.
 - (3) Measure the distance (B) from the left edge of the paper to the first vertical line at the bottom of the sheet.
 - (4) Measure the total distance (C) from the top horizontal line to the bottom line on the left side of the sheet.
 - (5) Confirm that $(A - B) / C \times 100$ is less than 0.5%.
 - (6) If the skew is more than 0.5%, loosen one screw on the guide roller adjusting plate and two screws on the timing roller adjusting plate, and slide the two plates in the same direction in the same amount.
- * Moving the plates one graduation on the scale changes the paper skew by 0.25%.
 - * Moving the plates in the F imprint direction moves the image at the bottom of the sheet to the right, and moving in the R imprint direction moves the image at the bottom of the sheet to the left.

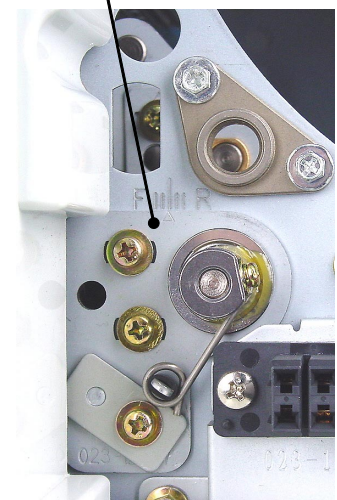


Guide roller adjusting plate



0529

Timing roller adjusting plate



0530

3. Print Start Position Adjustment

Checks and adjustment

- (1) Load A3-size papers on the paper feed tray, run Test mode No. 80 to make checker-flag image, and make 10 prints at speed 3 and use the 10th print to check.
- (2) Measure the distance from the leading edge of the paper to the top of the image and confirm that the measurement is 4 mm plus/minus 1 mm.
- (3) If the length is out of the specified range, make adjust using Test mode No.970 (vertical print position HP adjustment).

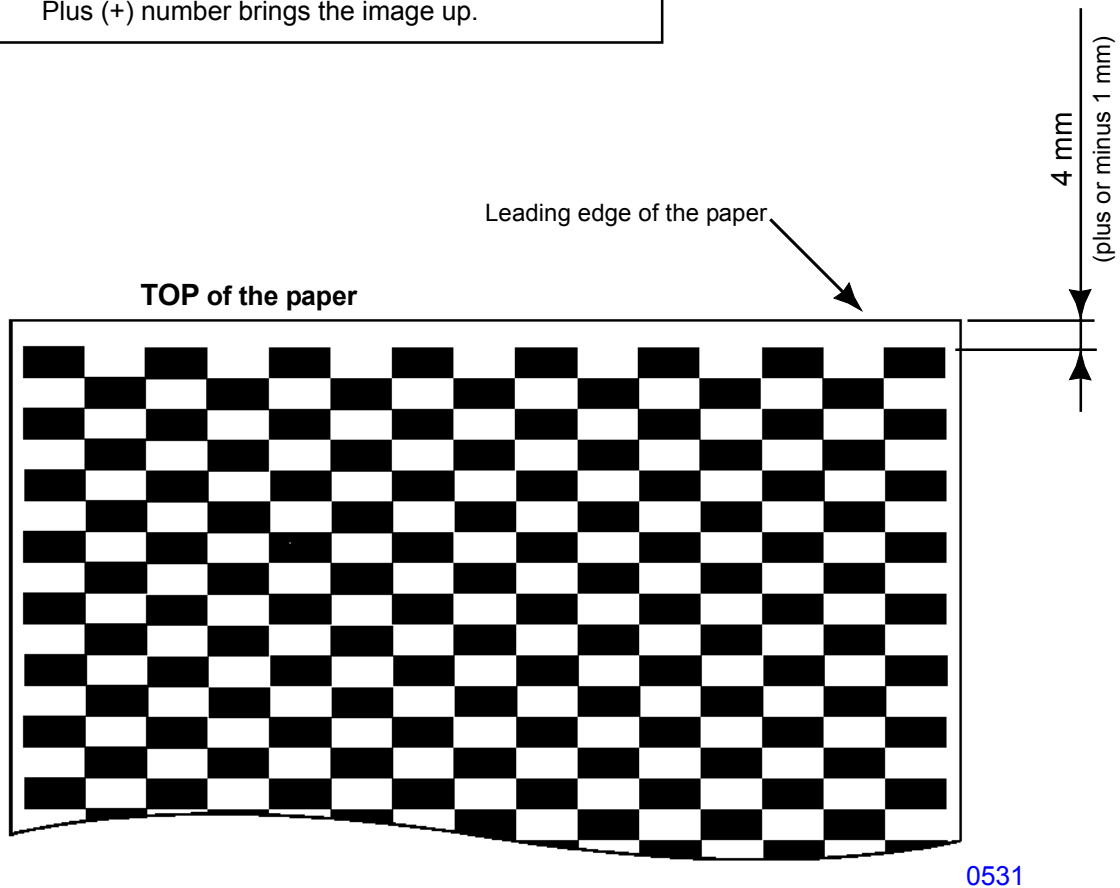
Test Mode No. 970 [Vertical print position HP adjustment]

Adjustable range: -50 to +50 (-5mm to +5mm)

Adjustable in units of 1 (1 = 0.1 mm)

Default setting = 0

Plus (+) number brings the image up.



MEMO

CHAPTER 6: PRESS SECTION

Contents

MECHANISM

- 1. Press Mechanism 6-2
- 2. Pressure Control Mechanism (RZ3 series) 6-4

DISASSEMBLY

- 1. Removing the Pressure Roller 6-5
- 2. Removing the Pressure Lever:Spring & Pressure Lever;Cam 6-6
- 3. Removing the Pressure HP Sensor (RZ 3 series) 6-7
- 4. Removing the Pressure Control Motor (RZ 3 series) 6-8

ADJUSTMENT

- 1. Mounting Position of the Pressure Lever;Spring 6-9

Mechanism

1. Press Mechanism

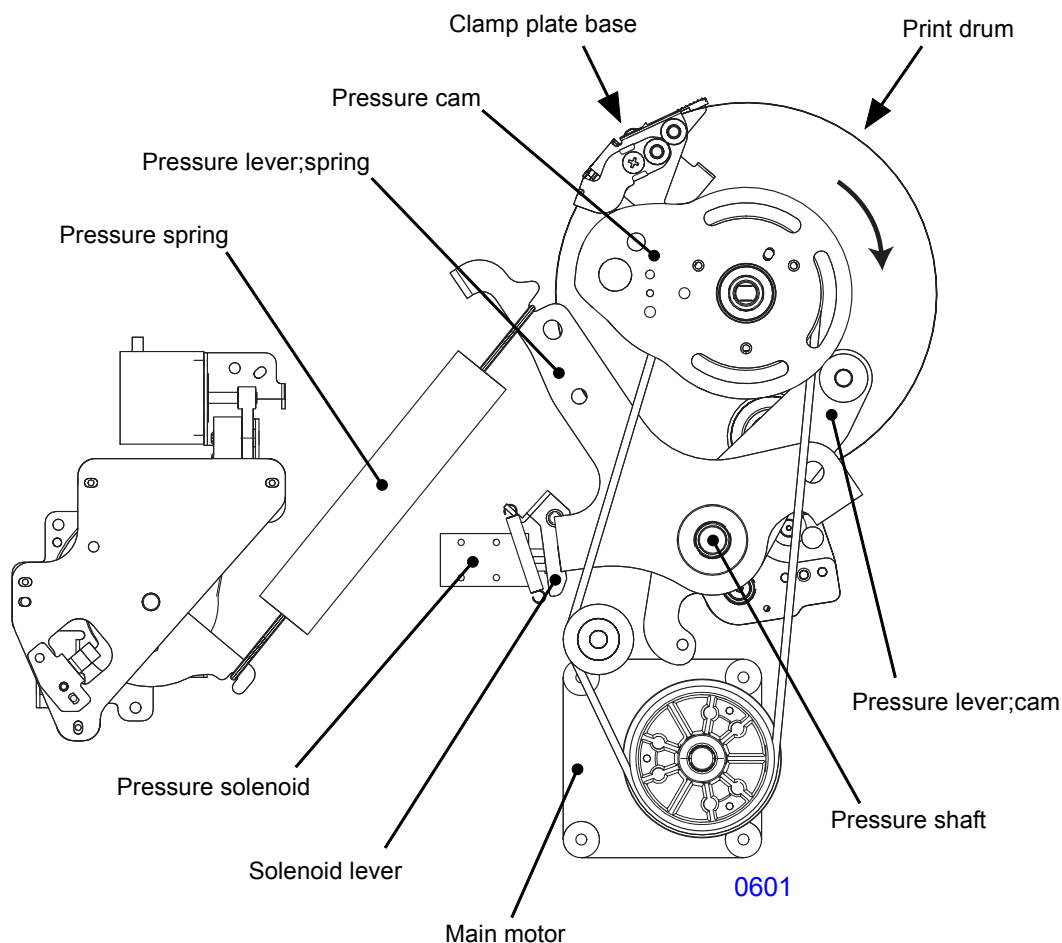
At the start of a printing job, the pressure solenoid turns ON when the print drum rotates to a given angle, and tries to unhook the solenoid lever away from the pressure lever;cam which is still engaged until the print drum makes further rotation.

As the print drum continues to rotate, the cam follower on the pressure shaft;cam start to ride on the high portion of the pressure cam, making the pressure lever;cam to swing in the clockwise direction with its pivot on the pressure shaft. As the lever starts to ride on the highest point on the cam, it touches and starts to swing the pressure lever;spring in the clockwise direction. As the pressure lever;spring swings in the clockwise direction with the pivot at the pressure shaft, the solenoid lever disengages and allows the pressure solenoid to pull the solenoid lever further in, completely disengaging it from the pressure lever:spring.

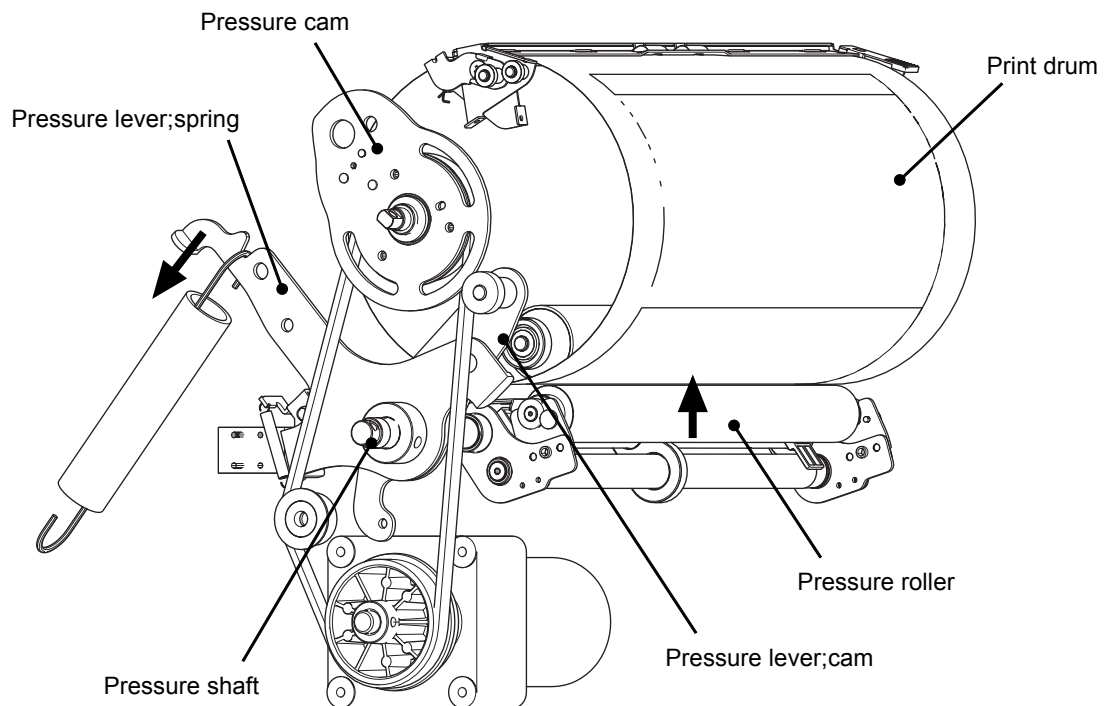
As the print drum rotates further, the pressure lever;cam starts to ride on the lower portion of the pressure cam, causing the lever to swing back in the counterclockwise direction. The pressure lever;spring, freed from the pressure lever;cam, is pulled by the pressure spring to rotate in the counterclockwise direction, rotating the pressure shaft in the counterclockwise direction together. The counterclockwise direction rotation of the pressure shaft lifts the pressure roller up and press against the print drum.

When the clamp base plate of the print drum approaches the pressure roller, the pressure cam pushes the pressure lever;cam in the clockwise direction and lowers the pressure roller so the roller does not hit the clamp plate.

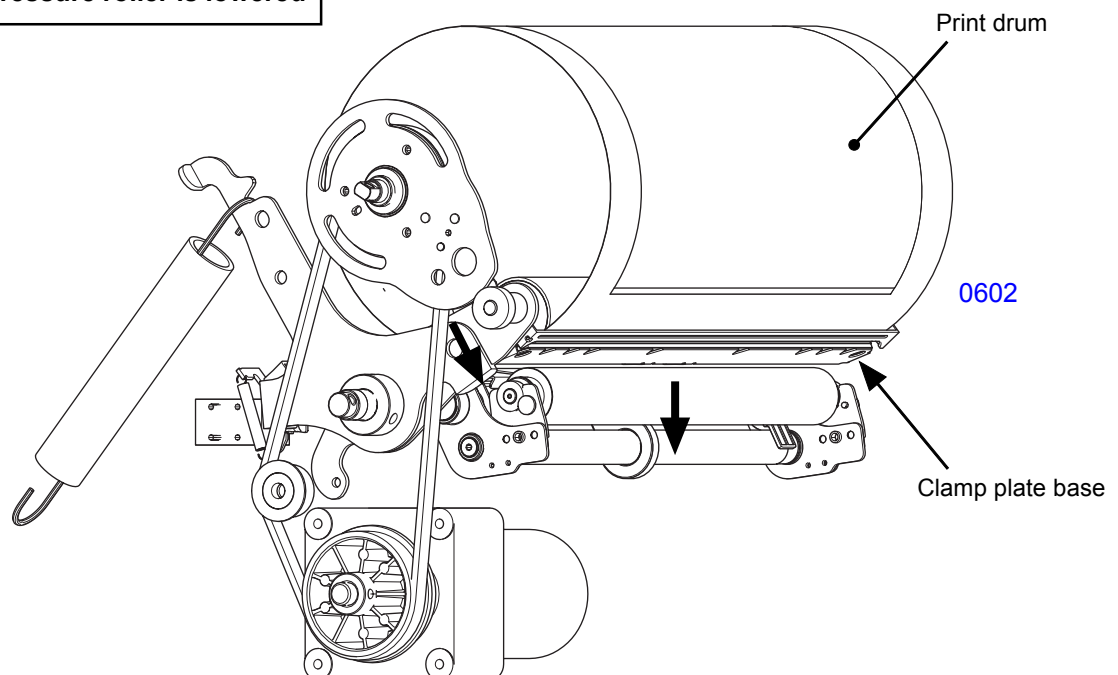
The pressure solenoid is kept ON all through the printing job. The solenoid goes OFF when the print drum comes to a given angle at the end of the printing job.



Pressure roller is raised

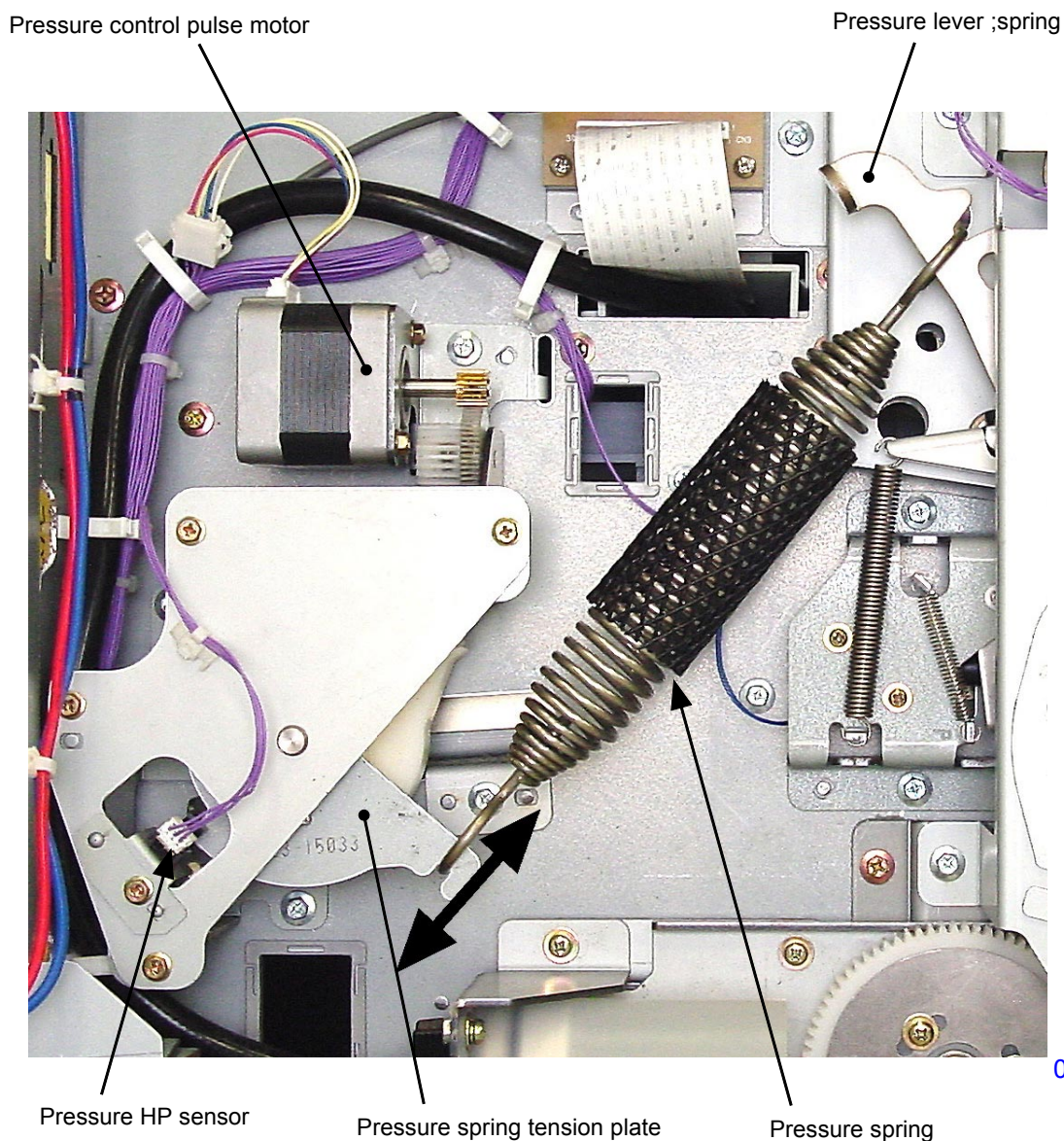


Pressure roller is lowered



2. Pressure Control Mechanism (RZ3 series)

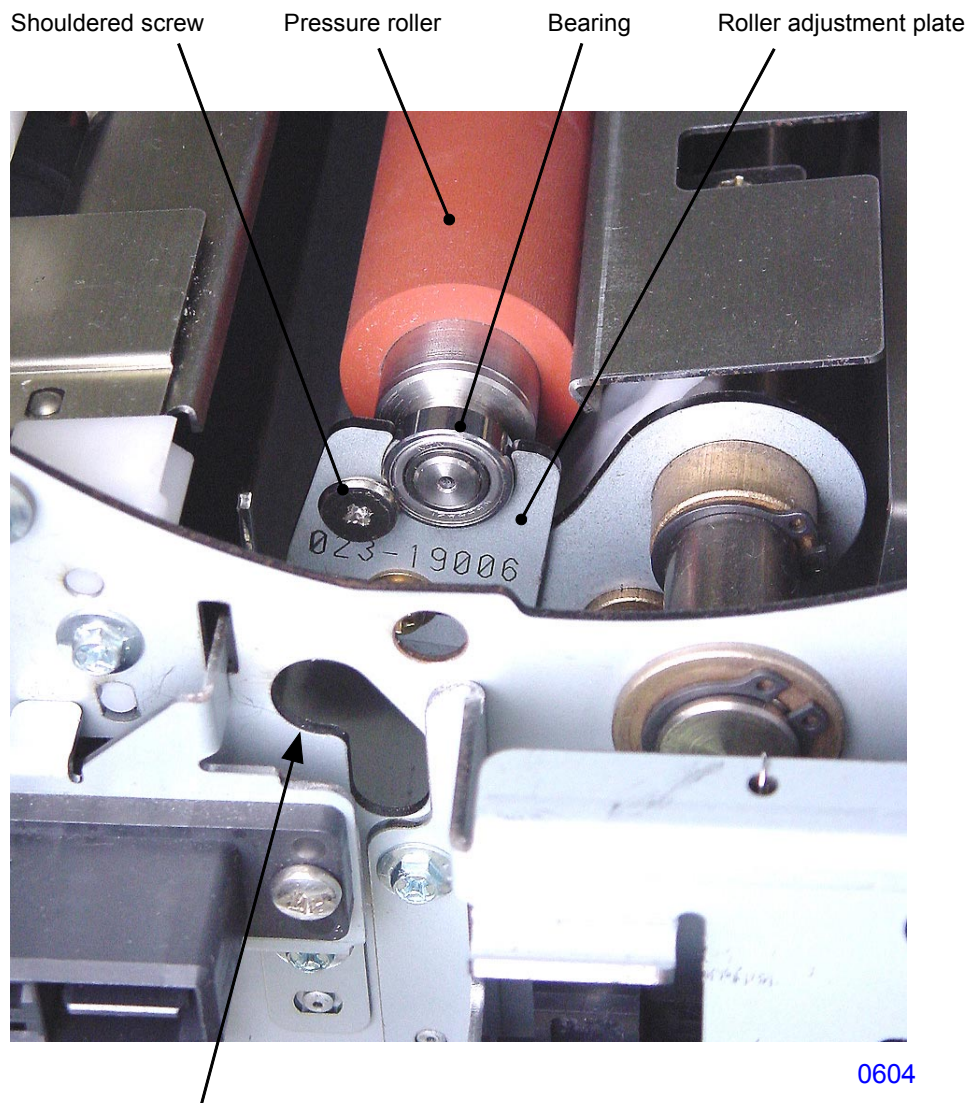
Pressing the ◀ or ▶ button of the print density key on the operation panel activates the pressure control pulse motor and moves the pressure spring tension plate. The movement of the pressure spring tension plate changes the tension of the pressure spring. This changes the amount of the pull applied on the pressure lever; spring, and changes the print density by changing how hard the pressure roller hits against the print drum. The print pressure control pulse motor activates only when the machine is in motion. The printing pressure varies depending on the printing speed, print density settings, ink color, how long the print drum was not used and internal temperature of print drum. The print pressure HP sensor detects the home position of the printing pressure, which is printing pressure No.3.



Disassembly

1. Removing the Pressure Roller

- (1) Pull out the print drum and switch off the machine power.
- (2) Insert a screwdriver through the hole of the front frame, and remove the shouldered screw.
- (3) Pull the pressure roller forward until the bearing disengages from the roller adjustment plate, and then lift the roller up to remove.

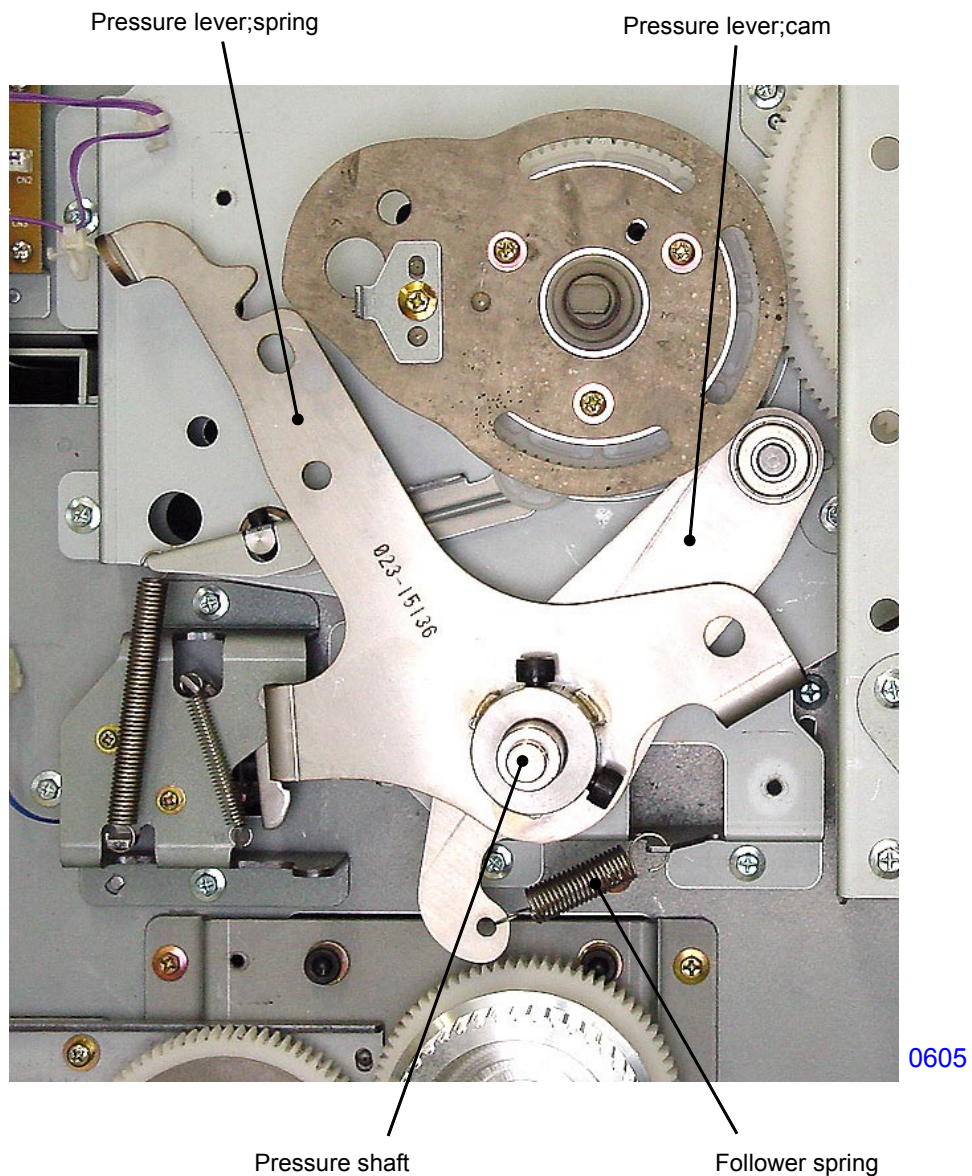


2. Removing the Pressure Lever;Spring & Pressure Lever;Cam

- (1) Remove the main belt. (Refer to chapter 3)
- (2) Unhook the follower spring.
- (3) Loosen cap screws (M6x10: 2pcs), and remove the pressure;spring and pressure;cam from the pressure shaft.

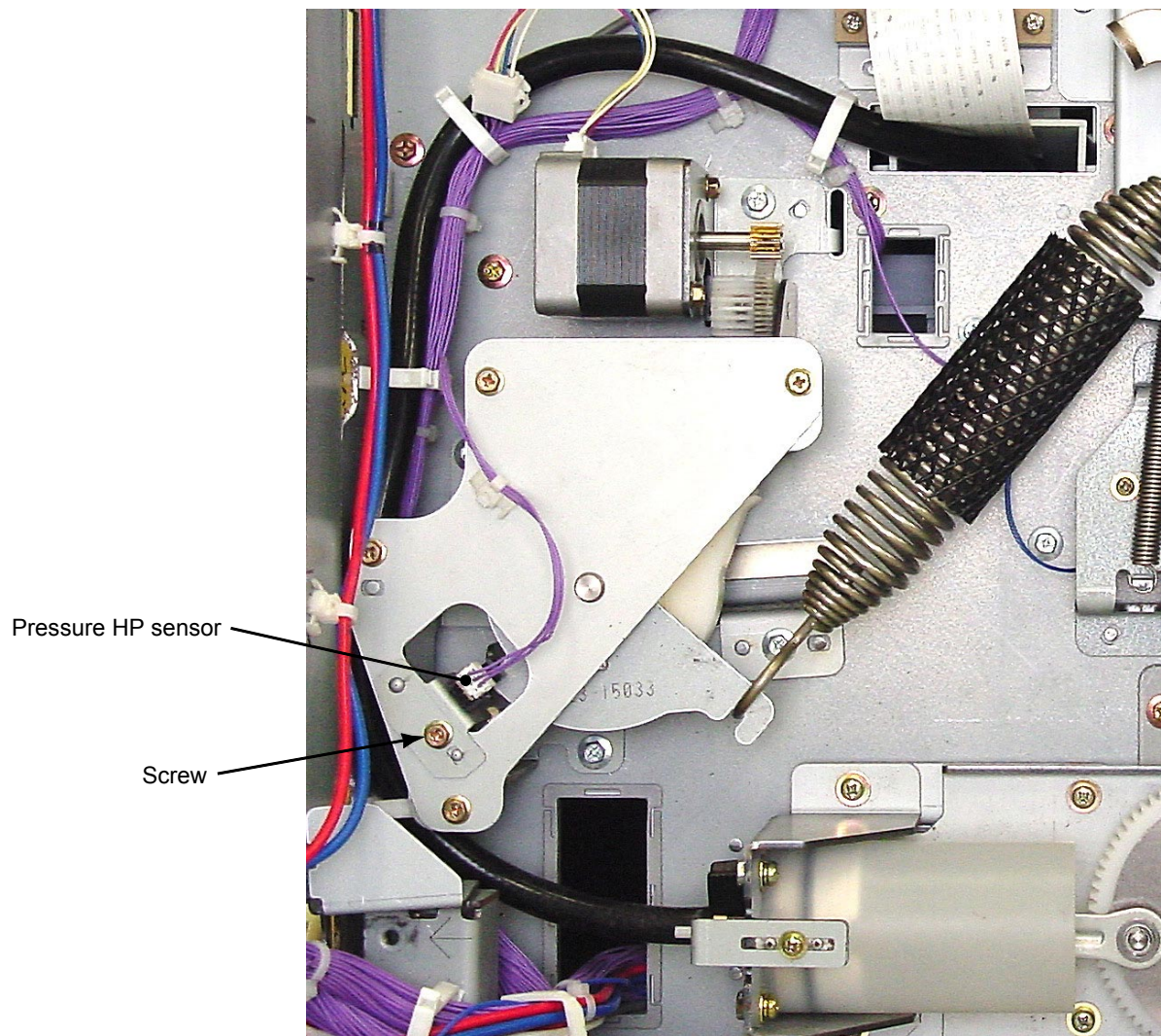
<< Precaution in Reassembly >>

Make sure to adjust the mounting position of the pressure lever;spring. (Refer to end of this chapter)



3. Removing the Pressure HP Sensor (RZ 3 series)

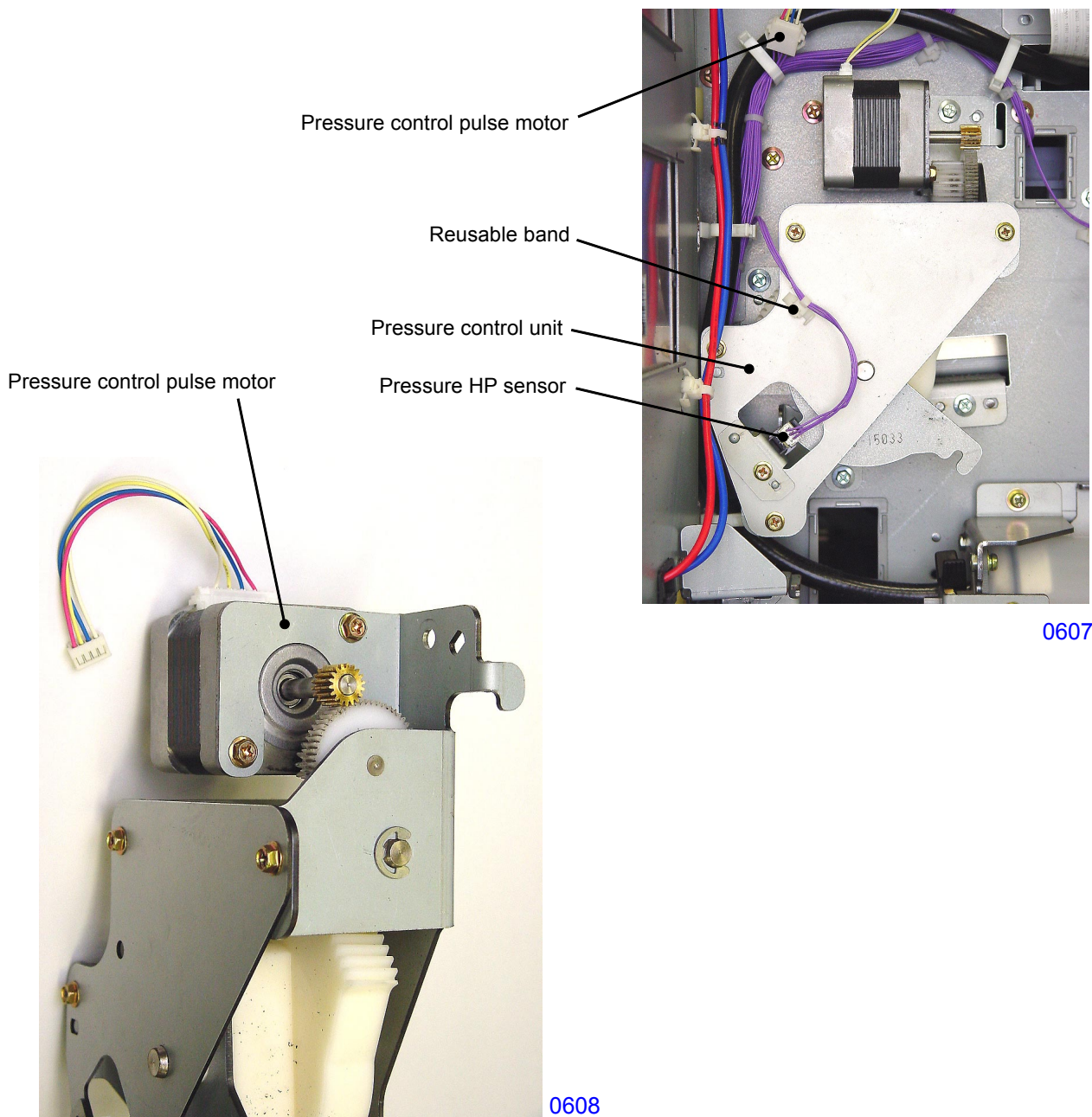
- (1) Switch off the machine power, remove the rear cover, and swing open the PCB bracket of the power supply PCB and mechanical control PCB.
- (2) Remove the pressure HP sensor from the machine together with the sensor bracket by disconnecting the sensor connector and a screw (M3x6: 1pc).



0606

4. Removing the Pressure Control Motor (RZ 3 series)

- (1) Switch off the machine power, remove the rear cover, and swing open the PCB bracket of the power supply PCB and mechanical control PCB.
- (2) Remove the pressure spring.
- (3) Unplug the connector from the pressure HP sensor and detach the reusable band.
- (4) Unplug the connector from the pressure control pulse motor.
- (5) Remove screws (M4x8: 3pcs), and remove the pressure control unit from the machine.
- (6) Remove the pressure control pulse motor from the pressure control unit by removing screws (M3x6: 2pcs).



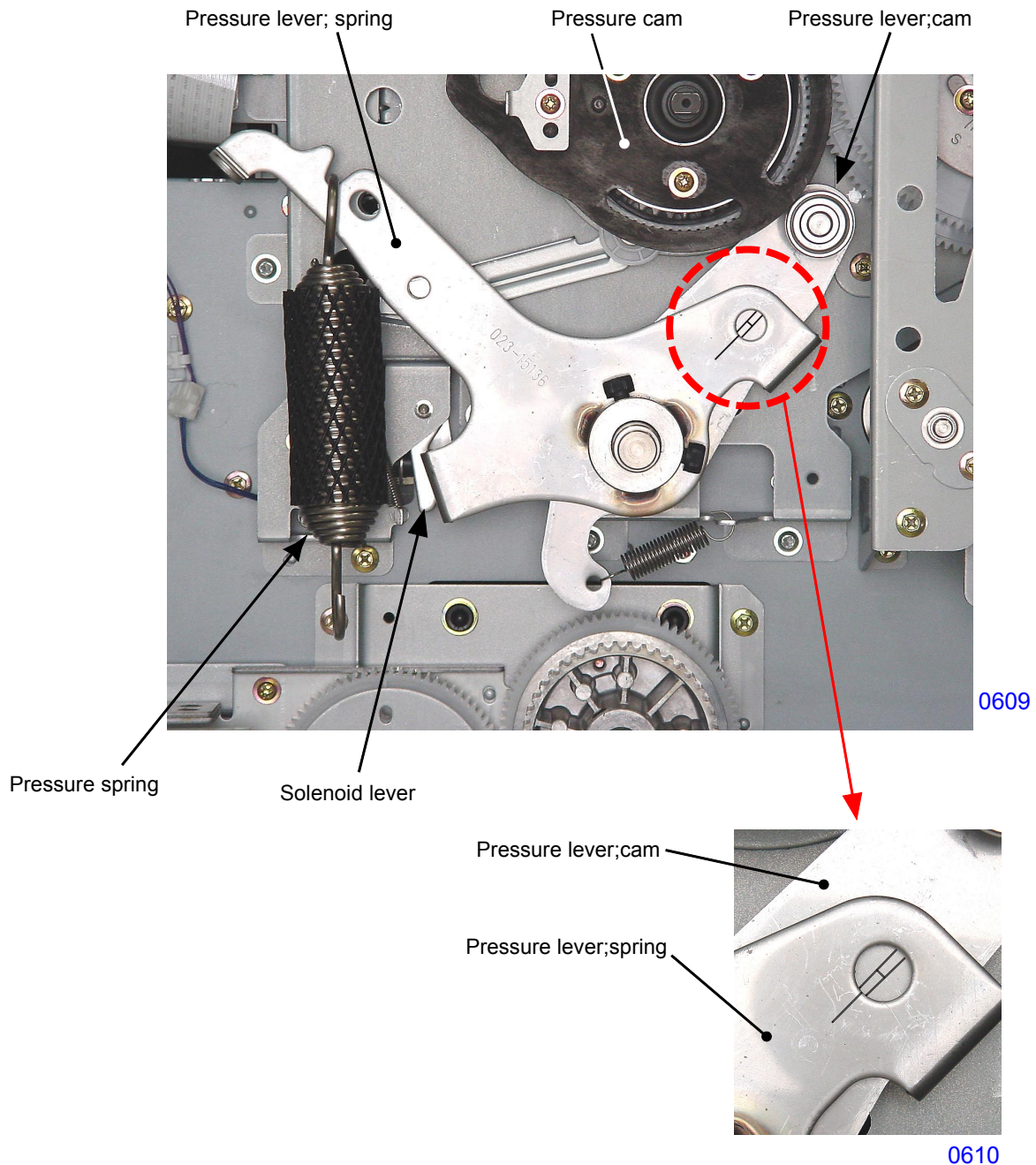
< Pressure Control Unit >

Adjustment

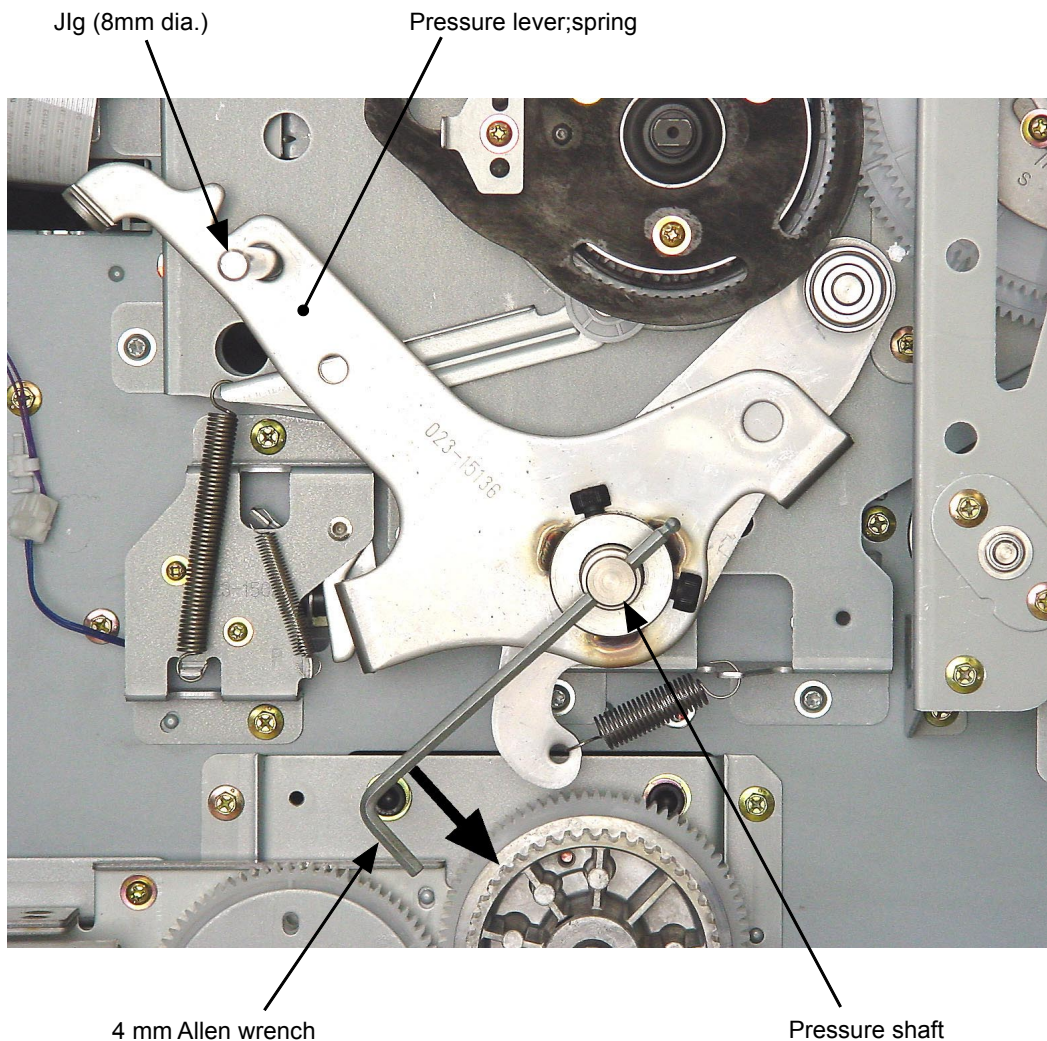
1. Mounting Position of the Pressure Lever;Spring

Checks and adjustment

- (1) Make confidential master on the print drum and turn off the machine power.
- (2) Remove the main cover assembly. (Refer to chapter 3)
- (3) Hook the pressure spring onto the pressure lever;spring and let the spring hang loose.
- (4) Unhook the solenoid lever from the pressure lever;spring and allowing the pressure roller to contact the print drum by the weight of the pressure spring hooked on the pressure lever;spring.
- (5) With the cam follower of the pressure lever;cam touching the pressure cam, confirm that the engraved line on the pressure lever;spring aligns in between the two engraved lines on the pressure lever;cam.



- (6) If step (5) is out of the specification, remove the pressure spring and loosen the two cap screws on the pressure lever;spring.
- (7) Align the hole on the pressure lever;spring with the position-B phase alignment hole, and insert the 8mm diameter JIG shaft through the two holes to fix the position of the pressure lever;spring in position.
- (8) Insert a 4mm Allen wrench through the hole on the tip of the pressure shaft and rotate the Allen wrench in the counterclockwise direction as shown on the photograph below, so the pressure roller touches the print drum very lightly. Tighten the two cap screws on the pressure lever;spring to fix the lever onto the shaft.
- (9) Recheck whether the pressure lever;spring is attached in a correct position or not by repeating steps (3) to (5) on the previous page and if the position is still incorrect, repeat the adjustments listed from (6) to (8) on this page.



Symptoms

- If the engraved line on the pressure lever;spring goes out to the left of the two lines on the pressure lever;cam, the pressure will be too weak and the printing density may become too light. Also the up-and-down motion of the pressure roller is out of the correct timing, and it may result in ink leakage from the print drum.
- If the engraved line on the pressure lever;spring goes out to the right of the two lines on the pressure lever;cam, the pressure is too strong. Also, the distance in which the pressure roller escapes from the clamp plate base assembly becomes less, and the pressure roller may hit the clamp plate. In addition to the too much pressure, the up-and-down motion of the pressure roller becomes out of timing, and may result in ink leakage from the print drum.

CHAPTER 7: PAPER EJECTION SECTION

Contents

MECHANISM

- 1. Paper Ejection Mechanism 7-2
- 2. Paper Separator Mechanism 7-3
- 3. Paper-Ejection-Wing Mechanism (RZ 3 Series) 7-4

DISASSEMBLY

- 1. Removing the Paper Receiving Tray 7-5
- 2. Removing the Suction Unit 7-6
- 3. Removing the Paper Ejection Motor and Paper Ejection FG sensor 7-7
- 4-1. Removing the Suction Upper Assembly (RZ3 series) 7-8
- 4-2. Removing the Suction Upper Assembly (RZ2 series) 7-9
- 5. Removing the Paper Ejection Sensor 7-10
- 6-1. Removing the Transfer Belts (RZ3 series) 7-11
- 6-2. Removing the Transfer Belts (RZ2 series) 7-12
- 7. Removing the Separation Fan Unit 7-13
- 8. Removing the Separator 7-15
- 9. Removing the Separation Lever 7-16
- 10. Removing the O-ring, Piston and Cylinder of the Air Pump. 7-17

ADJUSTMENT

- 1. Separator Mounting Position 7-21

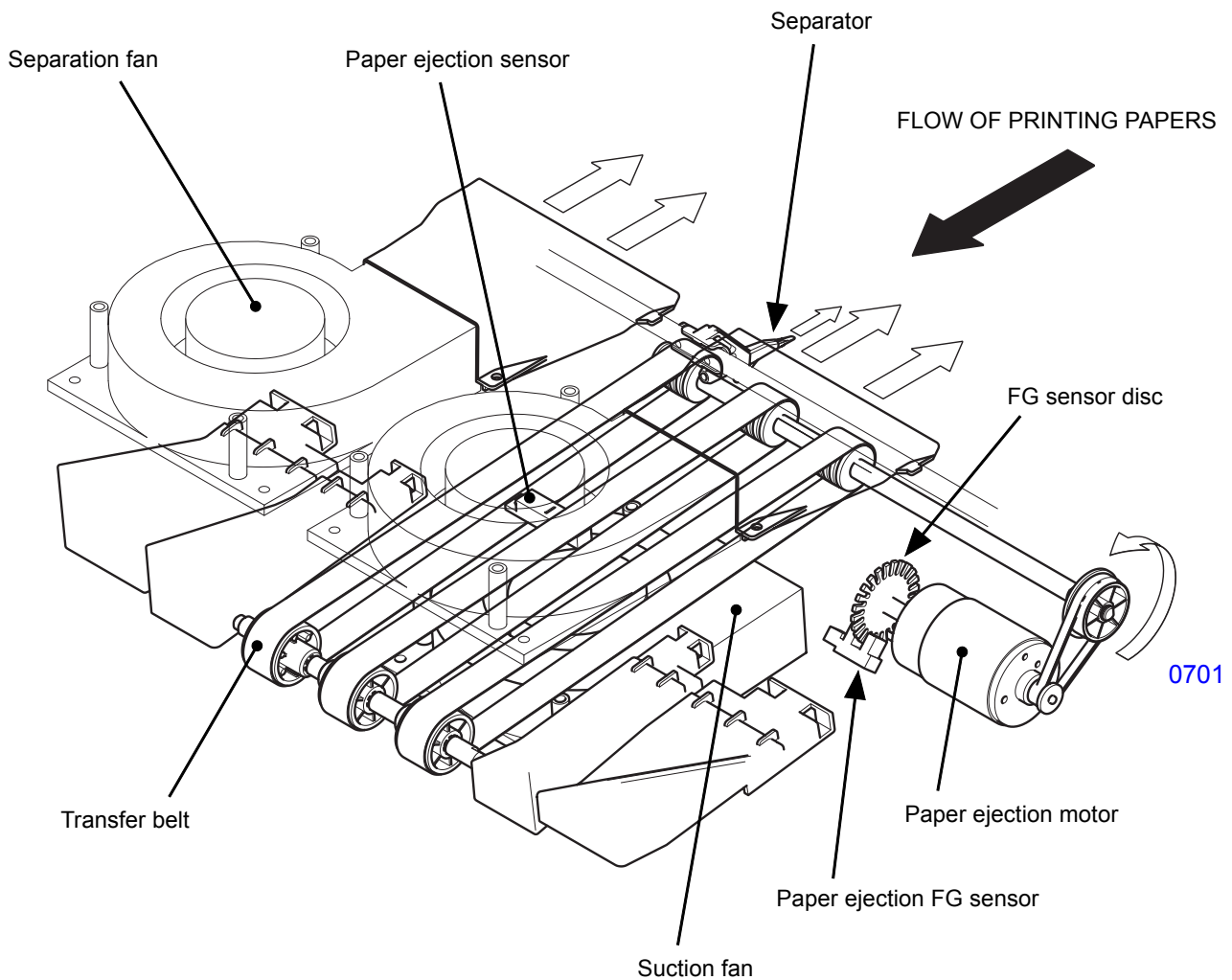
Mechanism

1. Paper Ejection Mechanism

The printed paper is removed from the print drum by the separator, air blown from the separator and air blown from two separation fans (one separation fan for model RZ2 series). The removed papers from the print drum is transferred onto the suction unit. The suction unit contains one large fan which pulls the paper onto the suction unit and the transfer belts on the suction unit ejects the paper onto paper receiving tray.

The transfer belts are driven by the paper ejection motor, and there is a paper ejection sensor on the suction unit to confirm whether the paper is correctly received from the print drum and then ejected out on the paper receiving tray.

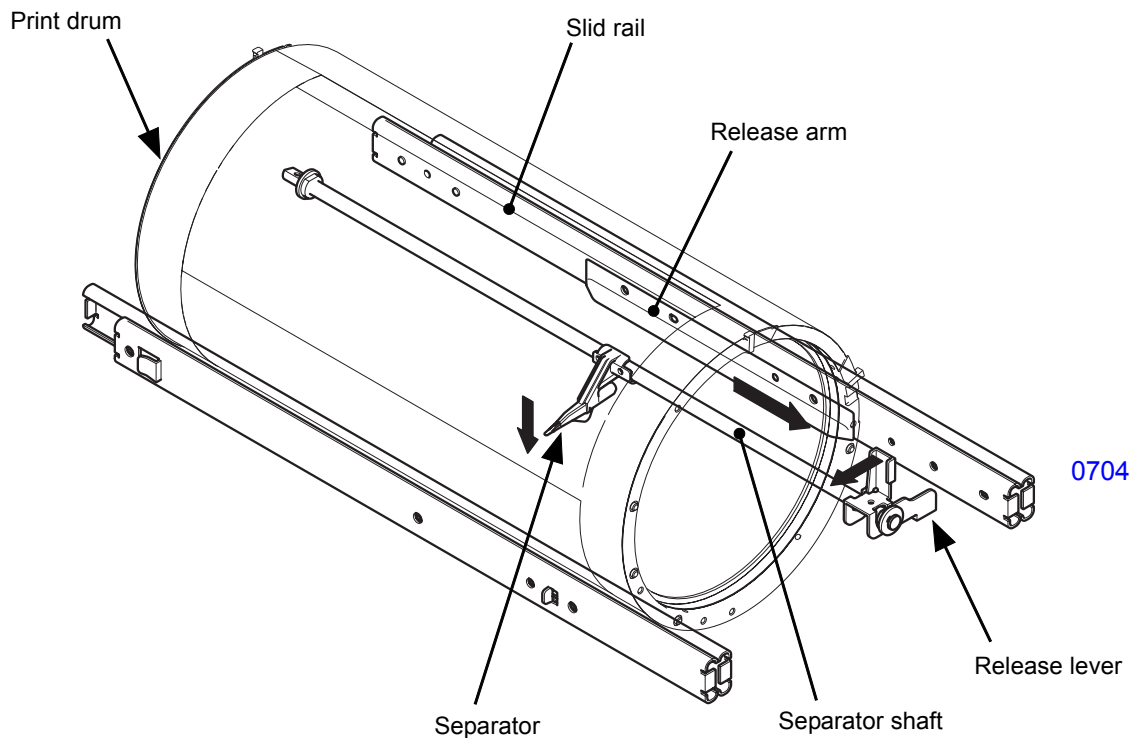
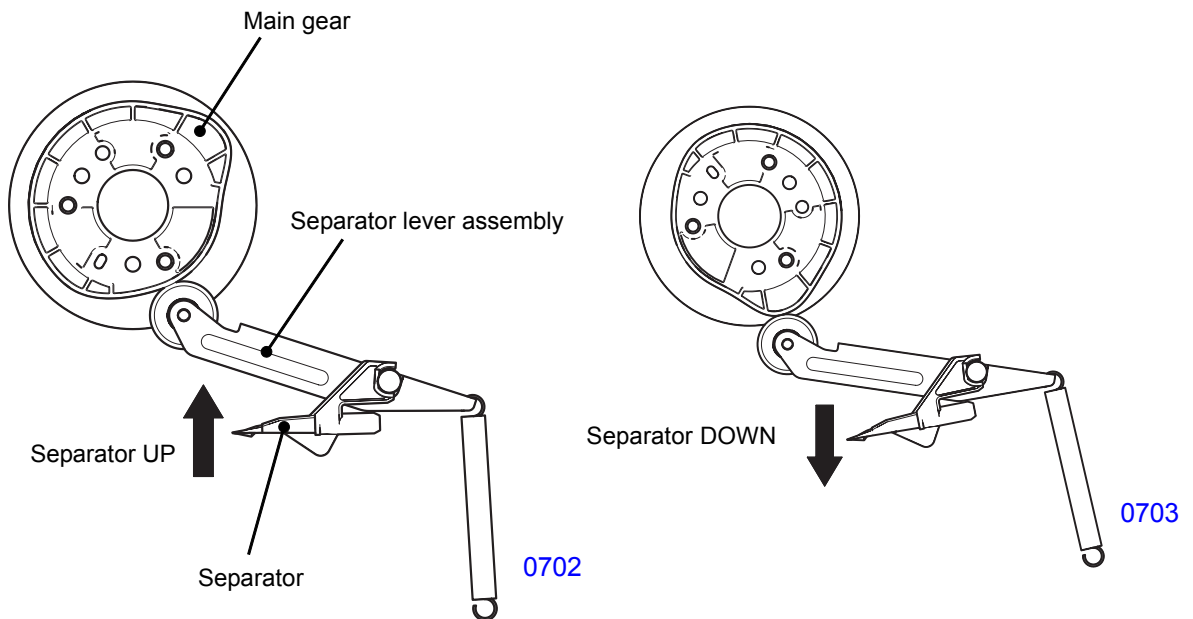
The FG sensor disc on the shaft of the paper ejection motor is monitored by the paper ejection FG sensor to check the motor rotation speed to ensure that the transfer belts are driven at a speed faster than the circumferential speed of the print drum for smooth paper transfer from the print drum onto the paper receiving tray.



2. Paper Separator Mechanism

The tip of the separator is positioned close to the print drum surface when separating the paper from the print drum. As the print drum rotates and the clamp plate base approaches the separator, the cam follower on the separator lever assembly rides on the high part of the main gear. The high part of the main gear pushes the separator lever assembly down. This action rotates the separator shaft and brings the tip of the separator down, away from the print drum to clear the clamp plate base on the print drum.

During the removal and insertion of the print drum into the machine, the tip of the separator needs to move away from the print drum to prevent being hit by the print drum. A plastic release arm attached on the slide rail pushes the release lever and rotates the separator shaft to move the tip of the separator down, away from the print drum during the print drum removal and insertion.

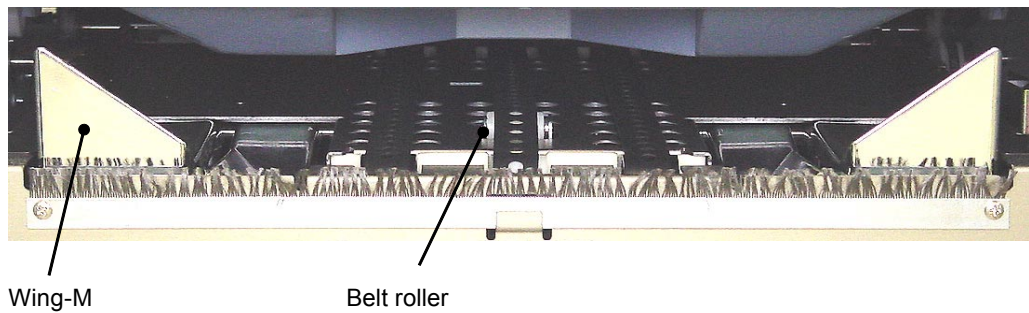


3. Paper-Ejection-Wing Mechanism (RZ 3 Series)

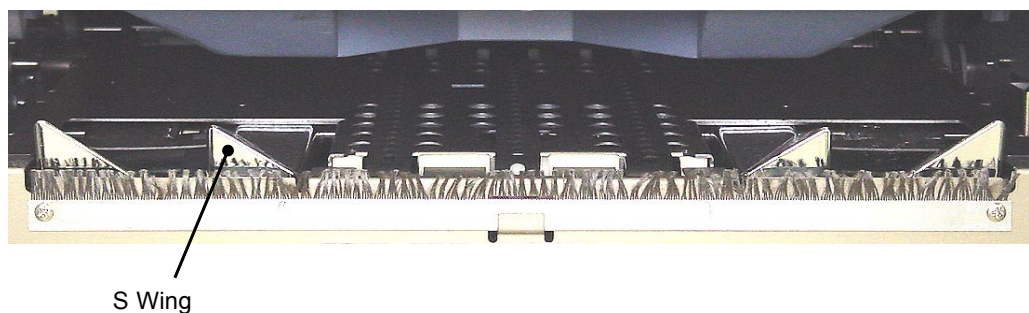
The paper-ejection-wing position can be set to a desired position manually by rotating a dial knob in following three positions.

The three positions of the paper-ejection-wings.

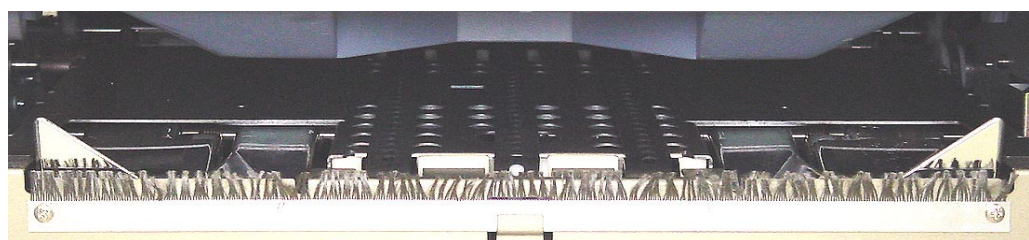
- (1) Both the wing-M and belt roller are at high position, and wing-S is lowered. This wing position is for papers of B4 size or larger.



- (2) Both the wing-M and belt roller is at low position, and wing-S is raised. This wing position is for papers of less than B4 size.



- (3) The wing-M, belt roller and wing-S are all at low position. This wing position is for all paper sizes of thick card papers.



Disassembly

1. Removing the Paper Receiving Tray

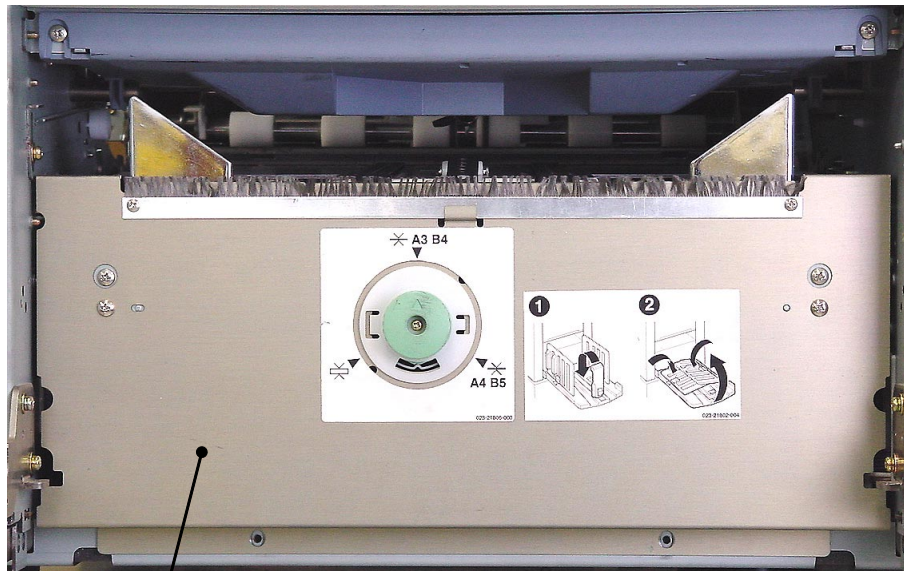
- (1) Open the paper receiving tray to an angle of about 45 degrees and lift it vertically upwards to detach from the machine.



0708

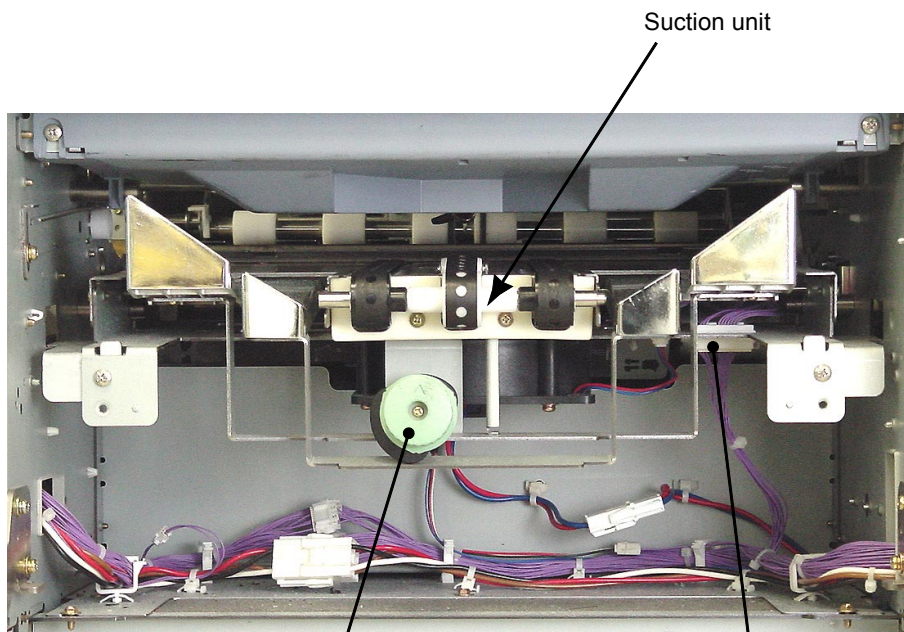
2. Removing the Suction Unit

- (1) Switch off the machine power and detach the paper receiving tray.
- (2) Remove the paper ejection cover by removing screws (M4x8: 4pcs).
- (3) Remove the wing cam assembly. (Only on RZ3 series)
- (4) Disconnect one wire harness connector, remove screws (M4x8: 2pcs) and pull the suction unit out while lifting it up a little.



0709

Paper ejection cover



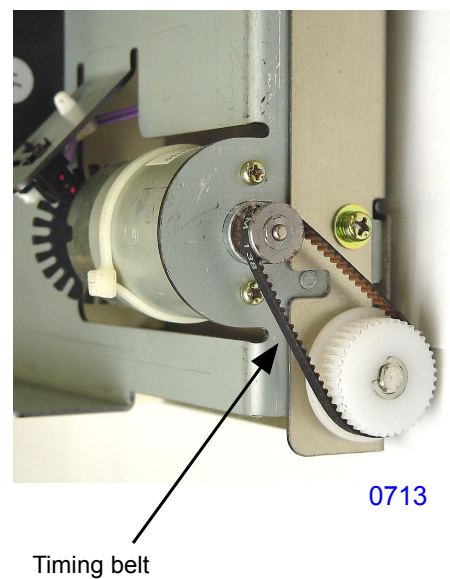
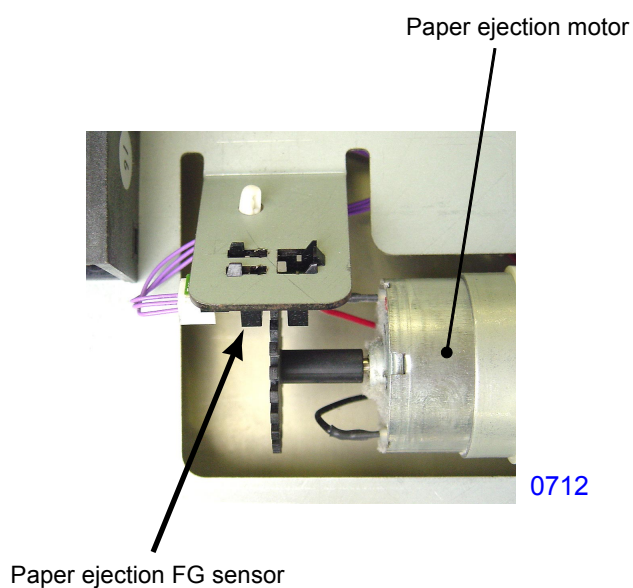
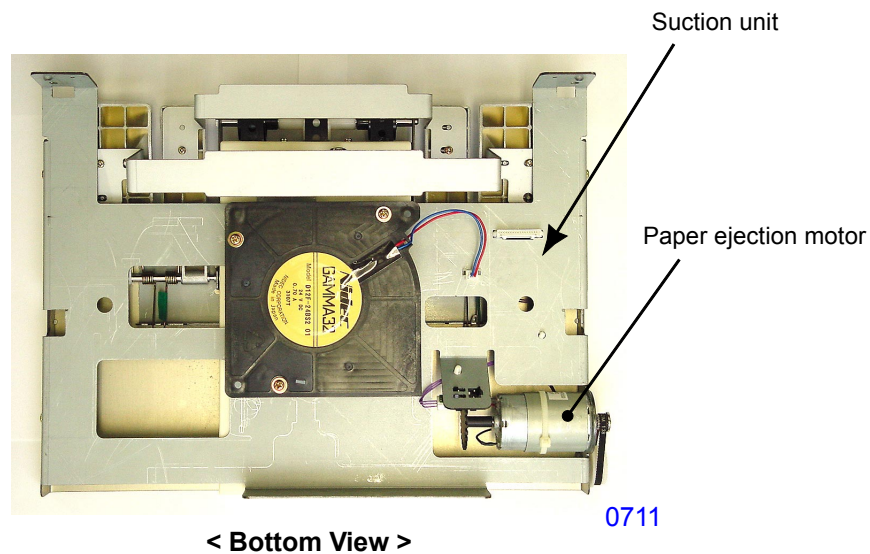
0710

Wing cam assembly

Connector

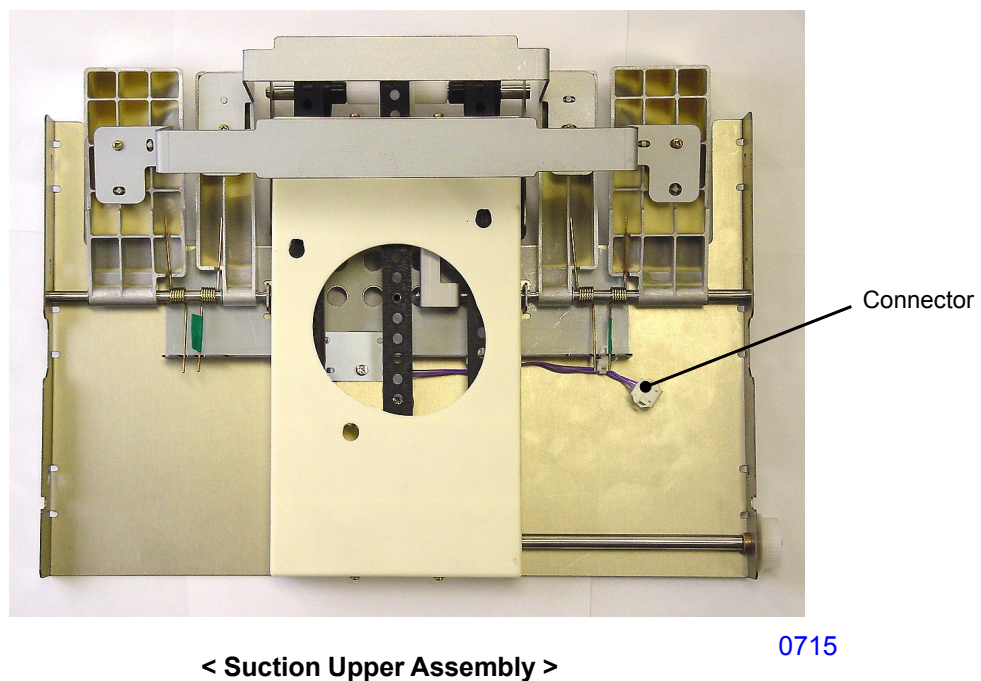
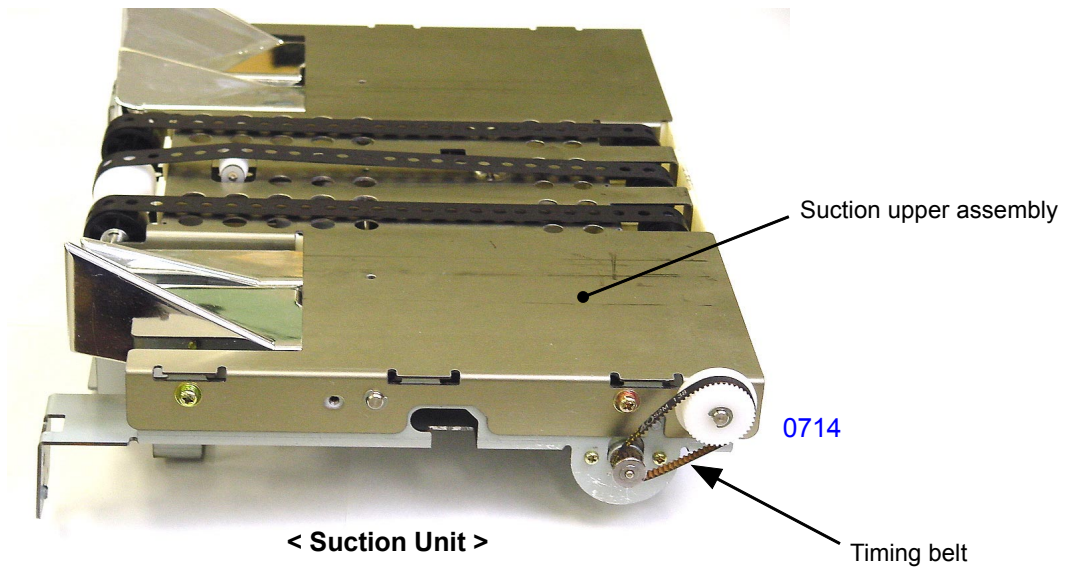
3. Removing the Paper Ejection Motor and Paper Ejection FG sensor

- (1) Switch off the machine power and remove following components .
 - Paper receiving tray
 - Paper ejection cover
 - Suction unit
- (2) Remove the timing belt
- (3) Remove screws (M3x5: 2pcs), disconnect the connector and detach the paper ejection motor.
- (4) Disconnect the connector and remove the paper ejection FG sensor from the bracket by unlocking the plastic hooks.



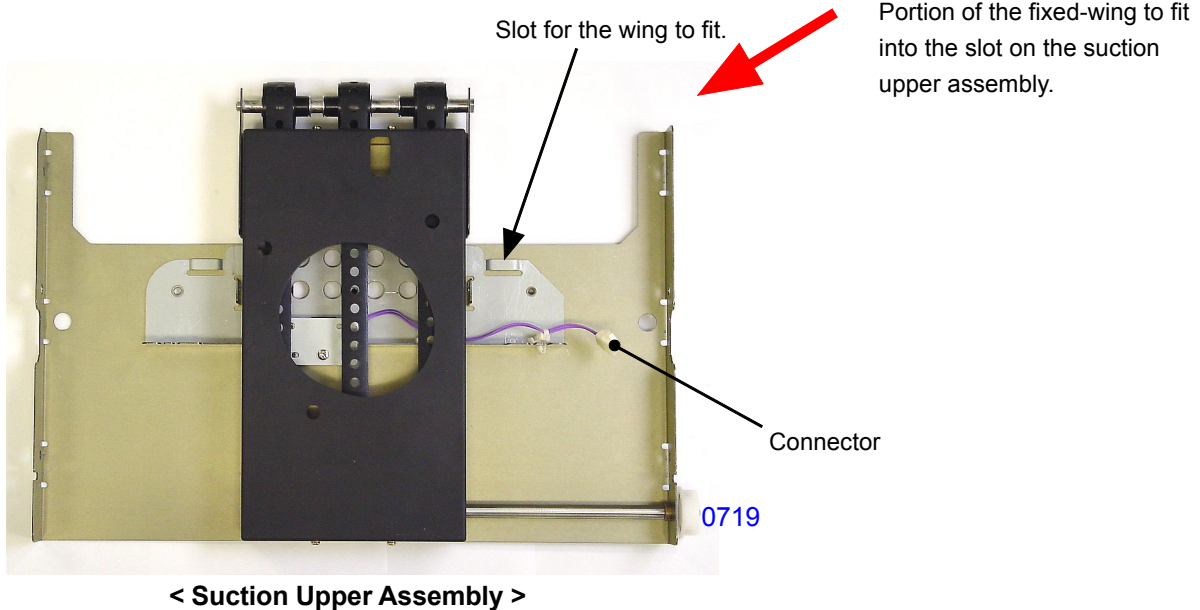
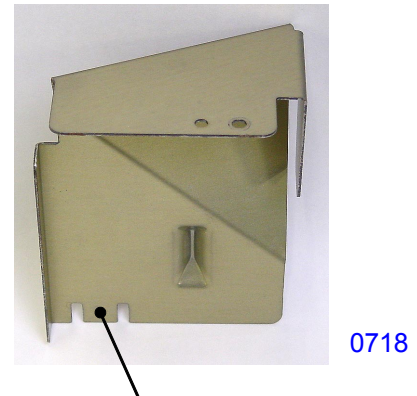
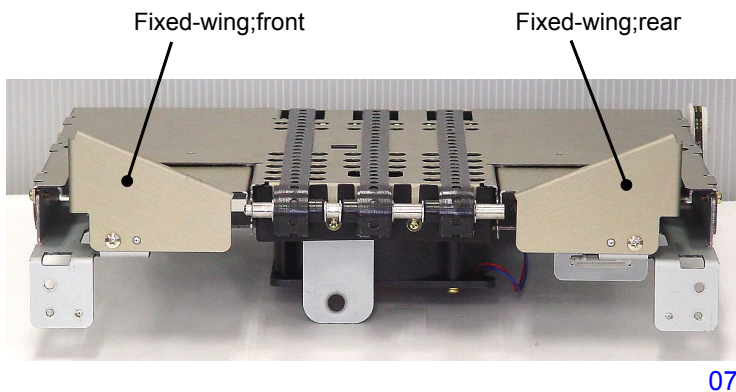
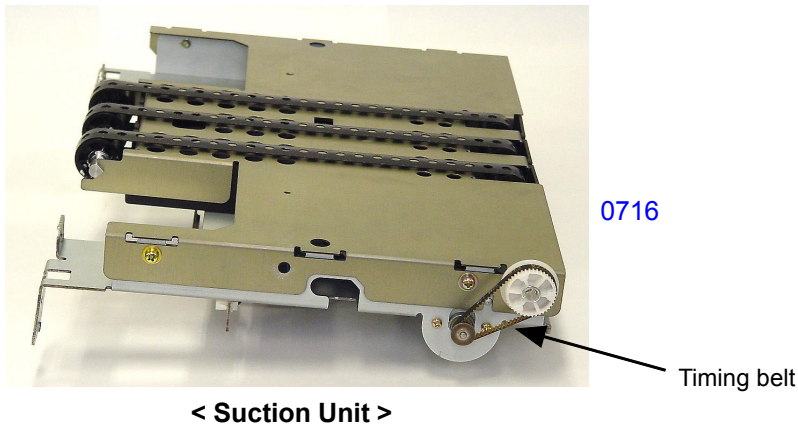
4-1. Removing the Suction Upper Assembly (RZ3 series)

- (1) Switch off the machine power and remove following components.
 - Paper receiving tray
 - Paper ejection cover
 - Suction unit
- (2) Remove the timing belt
- (3) Remove screws (M4x8: 4pcs), unplug the connector and separate the suction upper assembly from the suction unit.



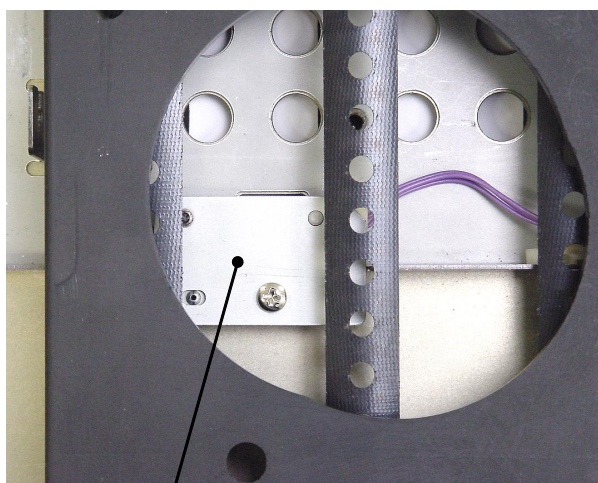
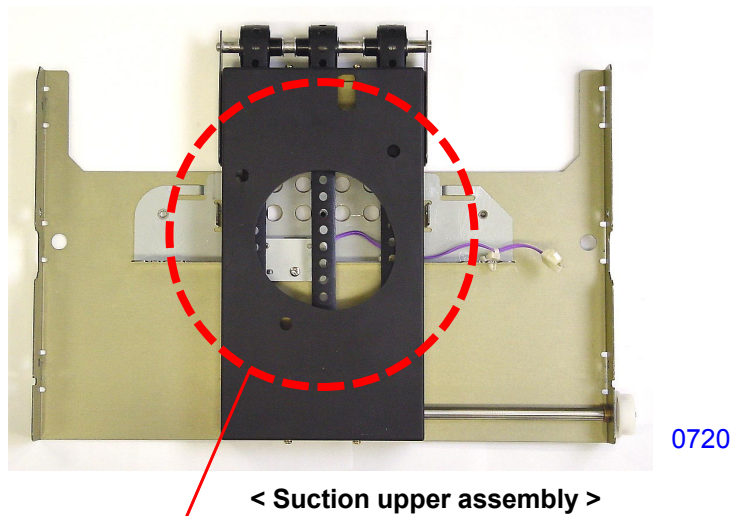
4-2. Removing the Suction Upper Assembly (RZ2 series)

- (1) Switch off the power, and remove the following components.
 - Paper receiving tray
 - Paper ejection cover
 - Suction unit
- (2) Remove the timing belt
- (3) Remove screw (M4x8: 1pc each), and remove the fixed-wing;front and fixed-wing;rear.
- (4) Remove screws (M4x8: 4pcs), unplug the connector and separate the suction upper assembly from the suction unit.



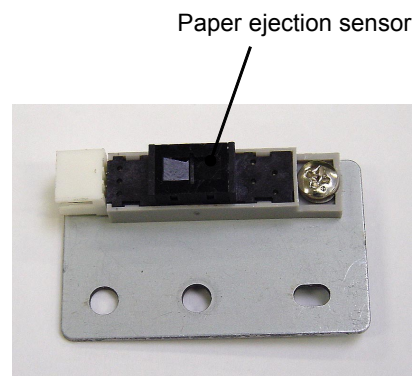
5. Removing the Paper Ejection Sensor

- (1) Switch off the machine power and remove the following components.
 - Paper receiving tray
 - Paper ejection cover
 - Suction unit
- (2) Remove the suction upper assembly.
- (3) Remove a screw (M3x6: 1pc), disconnect the connector, and detach the paper ejection sensor together with the sensor bracket.



Paper ejection sensor bracket

0721

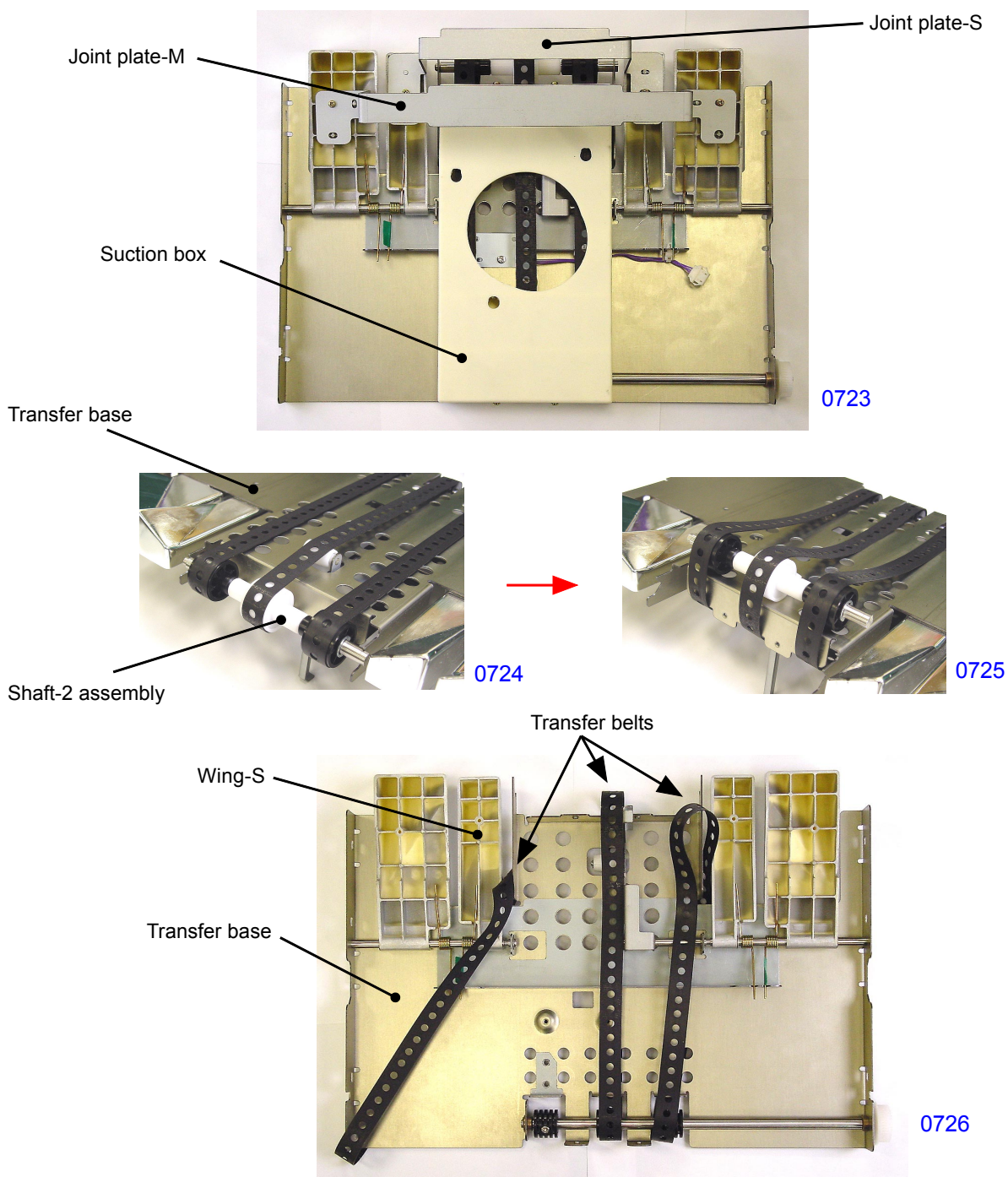


Paper ejection sensor

0722

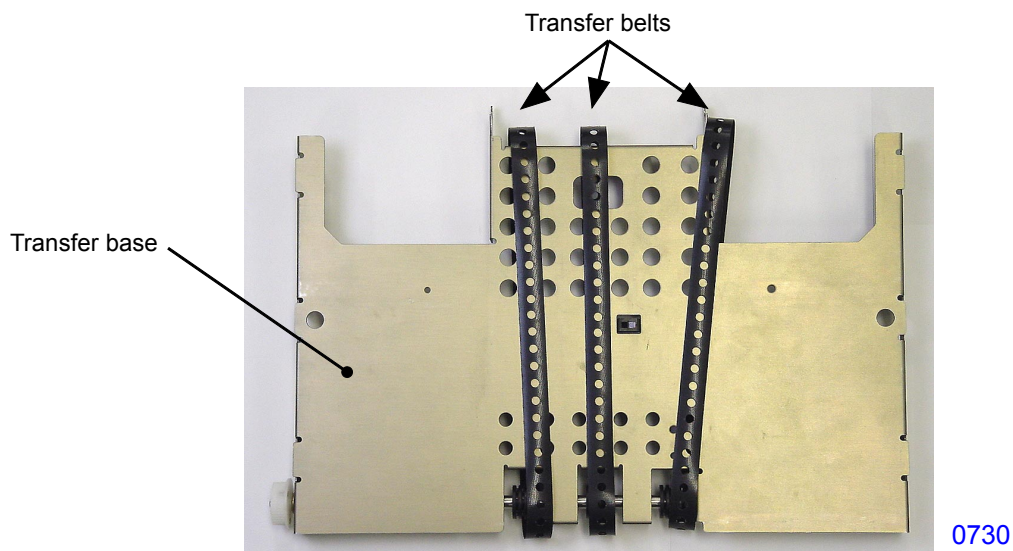
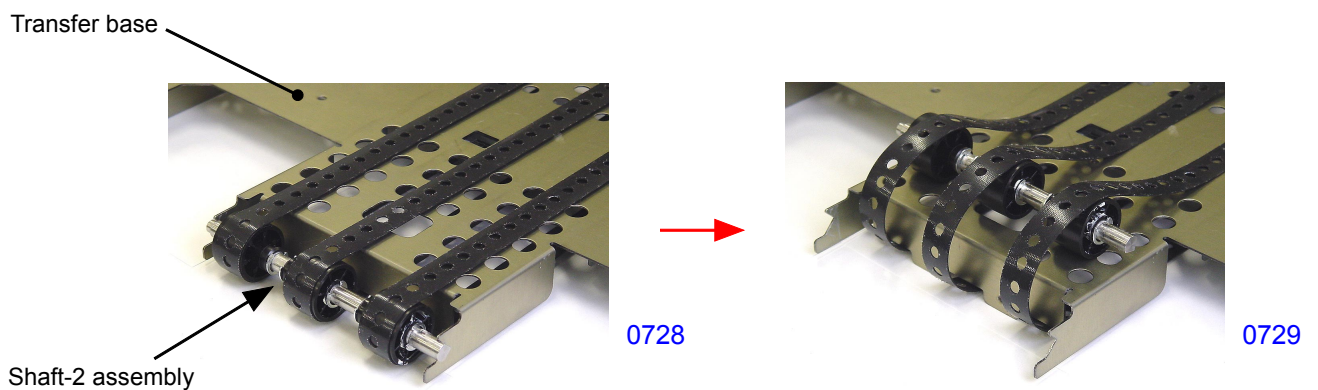
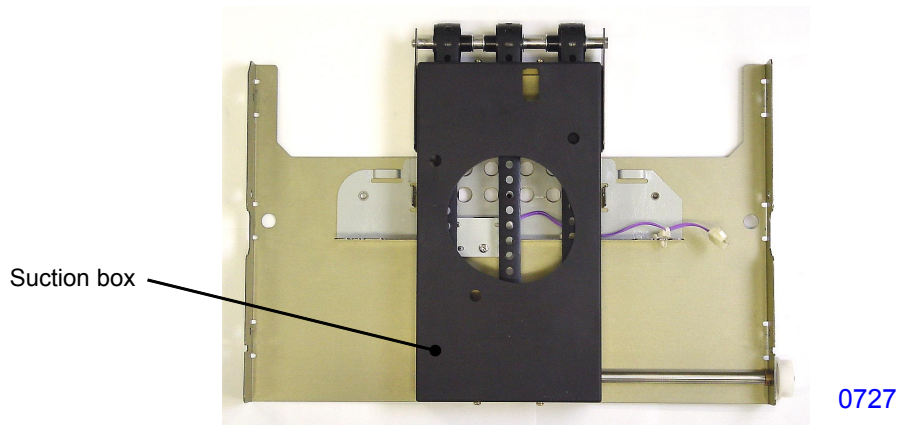
6-1. Removing the Transfer Belts (RZ3 series)

- (1) Switch off the machine power and remove the following components.
 - Paper receiving tray
 - Paper ejection cover
 - Suction unit
- (2) Remove the suction upper assembly.
- (3) Detach the suction box by removing screws (M3x8: 4pcs).
- (4) Detach the joint plate-M and joint plate-S by removing screws (M3x8: 2pcs each)
- (5) Lift the shaft-2 assembly with a finger, unhook it from the suction upper assembly and detach it.
- (6) Remove the transfer belts by first dropping them in the gap between the wing-S and transfer base to ease the tension of the belts.



6-2. Removing the Transfer Belts (RZ2 series)

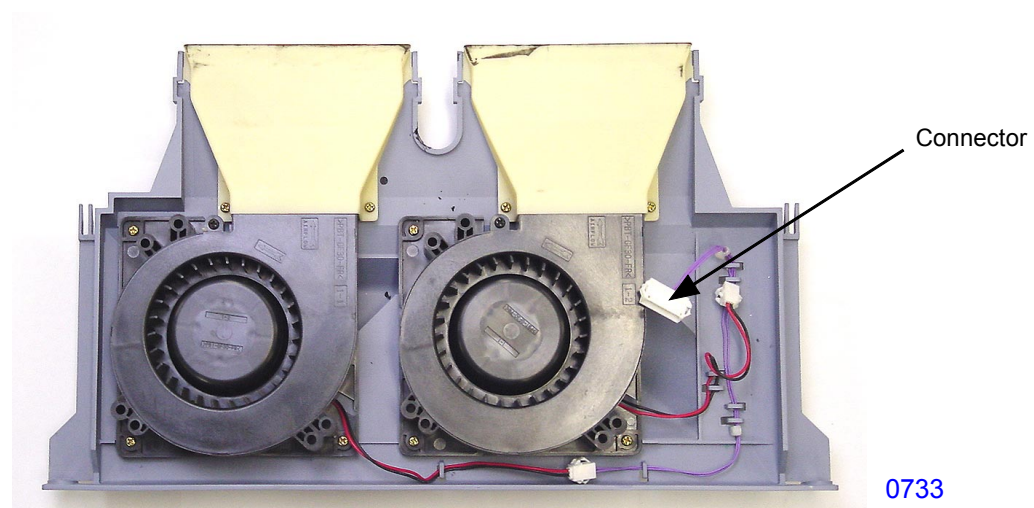
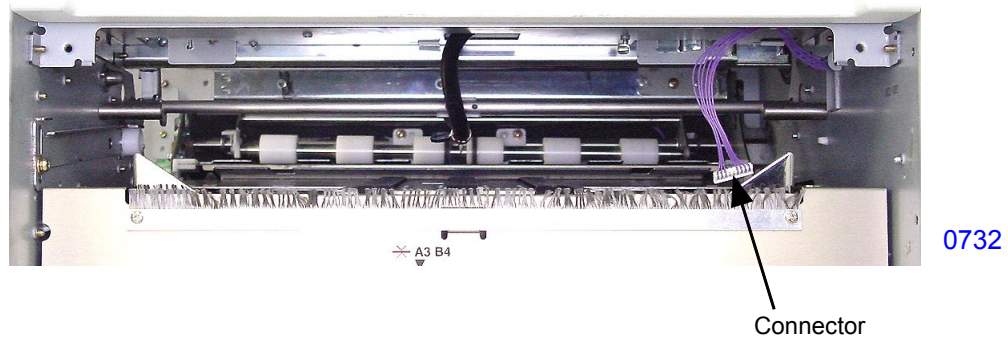
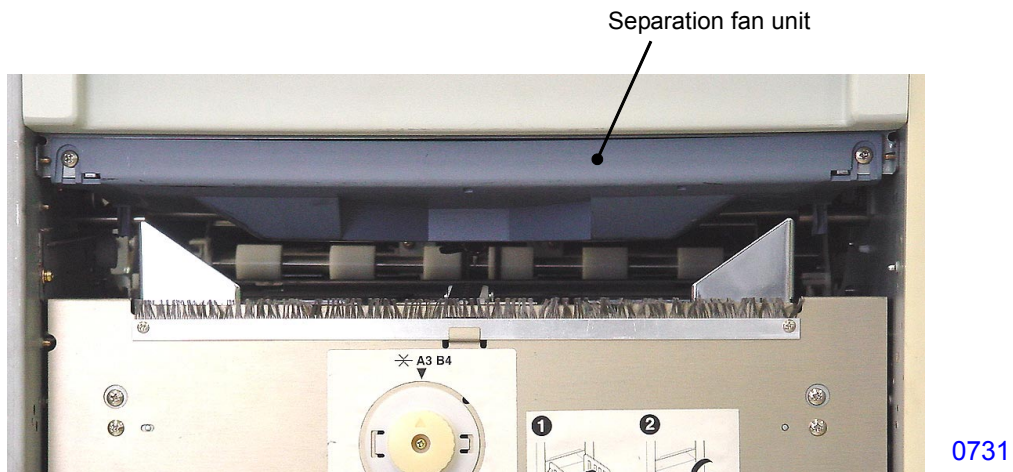
- (1) Switch off the machine power, remove the following components.
 - Paper receiving tray
 - Paper ejection cover
 - Suction unit
- (2) Remove the suction upper assembly.
- (3) Detach the suction box by removing screws (M3x8: 4pcs).
- (4) Lift the shaft-2 assembly with a finger, unhook it from the suction upper assembly and detach it.
- (5) Remove the transfer belts.



7. Removing the Separation Fan Unit

- (1) Switch off the machine power and remove the paper receiving tray.
- (2) Remove screws (M4x8: 2pcs), unplug the connector, and remove the separation fan.

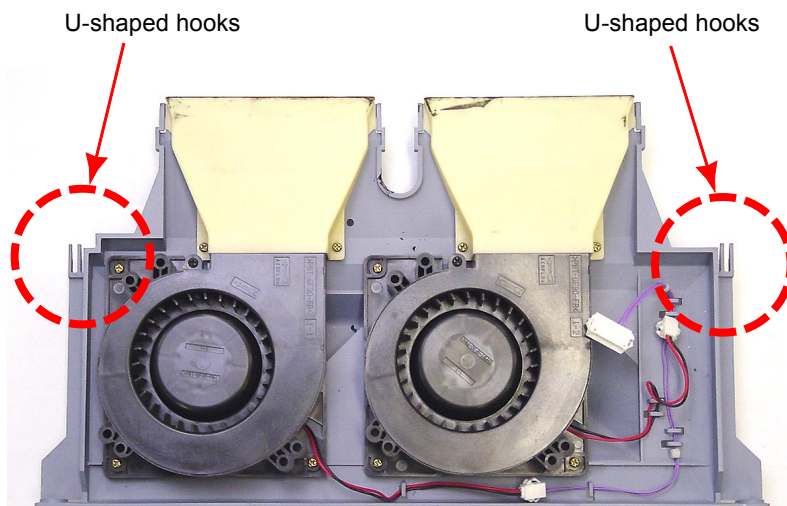
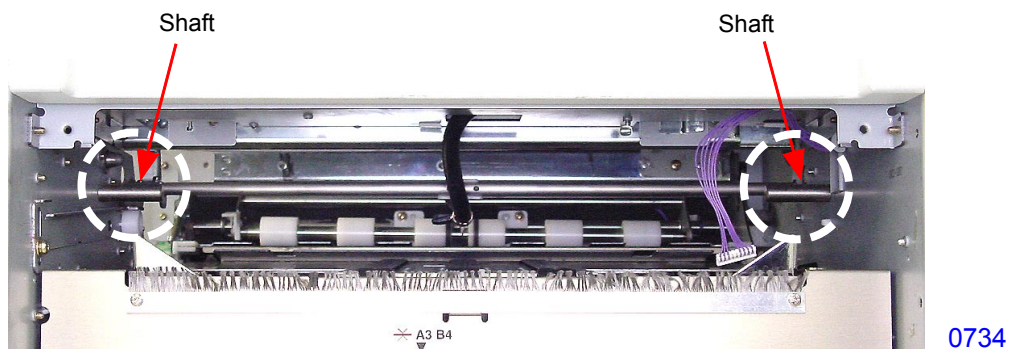
- Precaution in assembly continues on next page -



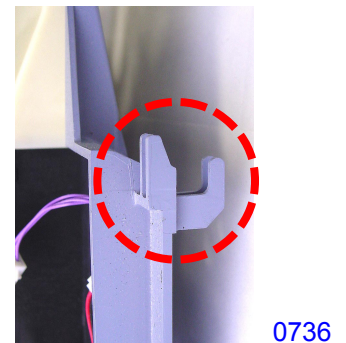
< Separation Fan Unit >

< Precautions in Reassembly >

- (1) Insert the U-shaped hooks on the separation fan unit into the shafts on the right and left of the machine frame.
- (2) Fit the flat pins on the machine frame into the small rectangular holes on the far right and far left of the separation fan unit to position the separation fan unit on the machine.



< U-shaped hook >
(Side View)



Flat pins on the machine frame inserted through the rectangular holes on the separation fan unit.

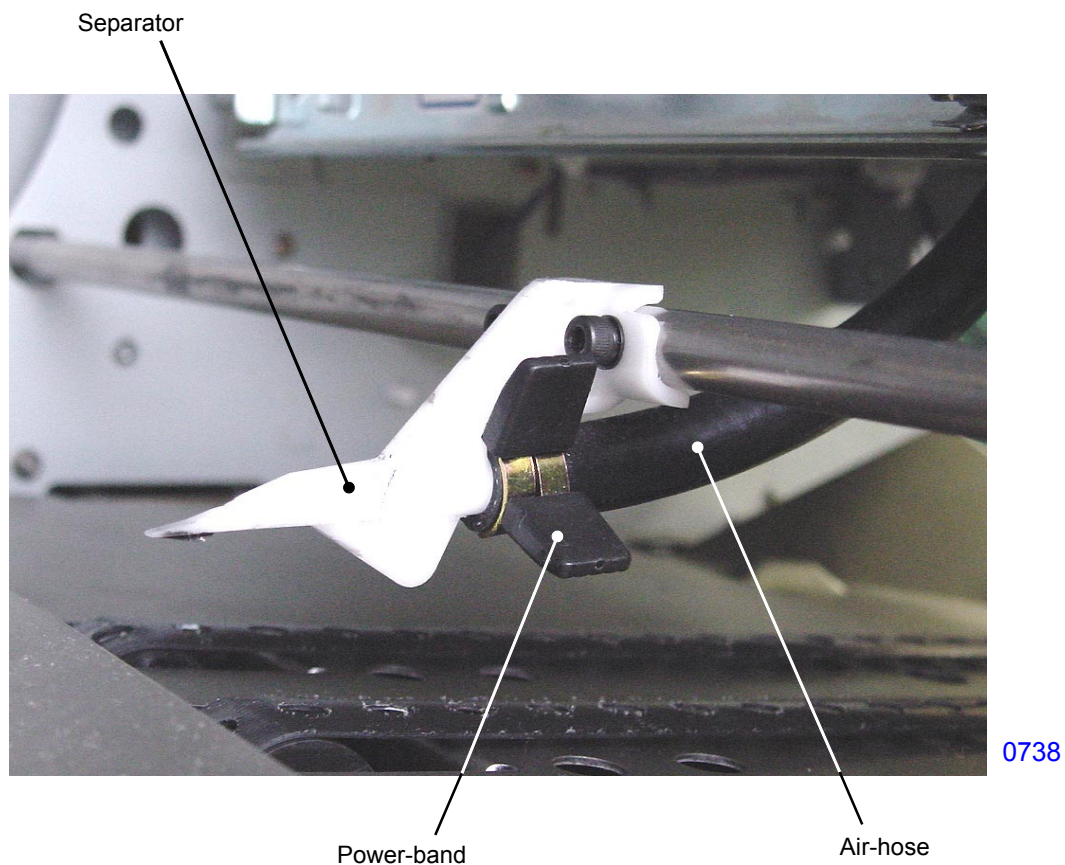


8. Removing the Separator

- (1) Switch off the machine power and remove the following components.
 - Paper receiving tray
 - Separation fan unit
- (2) Pinch the power-band, slide it away from the separator, and pull the air-hose off the separator.
- (3) Remove the cap screws (M3x10: 2pcs) and detach the separator from the shaft.

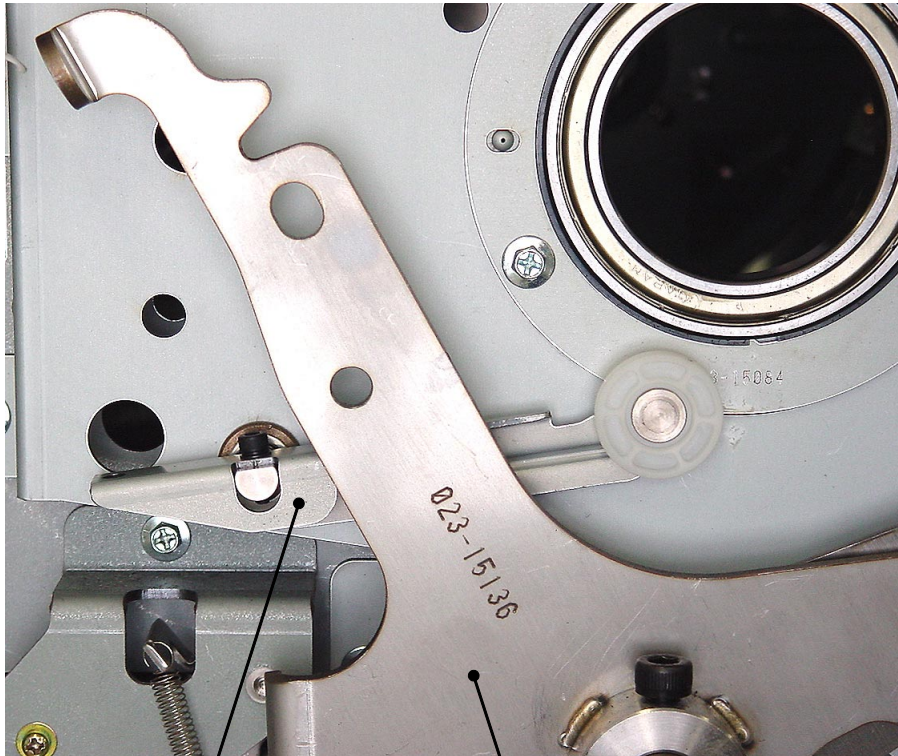
< Precaution in Reassembly >

The pinch knobs on the power-band should face towards you when installing it on the air-hose.



9. Removing the Separation Lever

- (1) Remove the main shaft assembly. (Refer to chapter 3)
- (2) Remove the cap screw (M3x10: 1pc) and detach the separator lever assembly.



Separator lever assembly

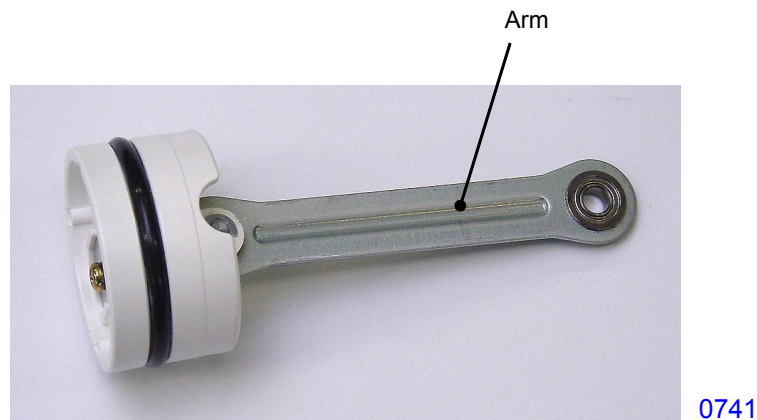
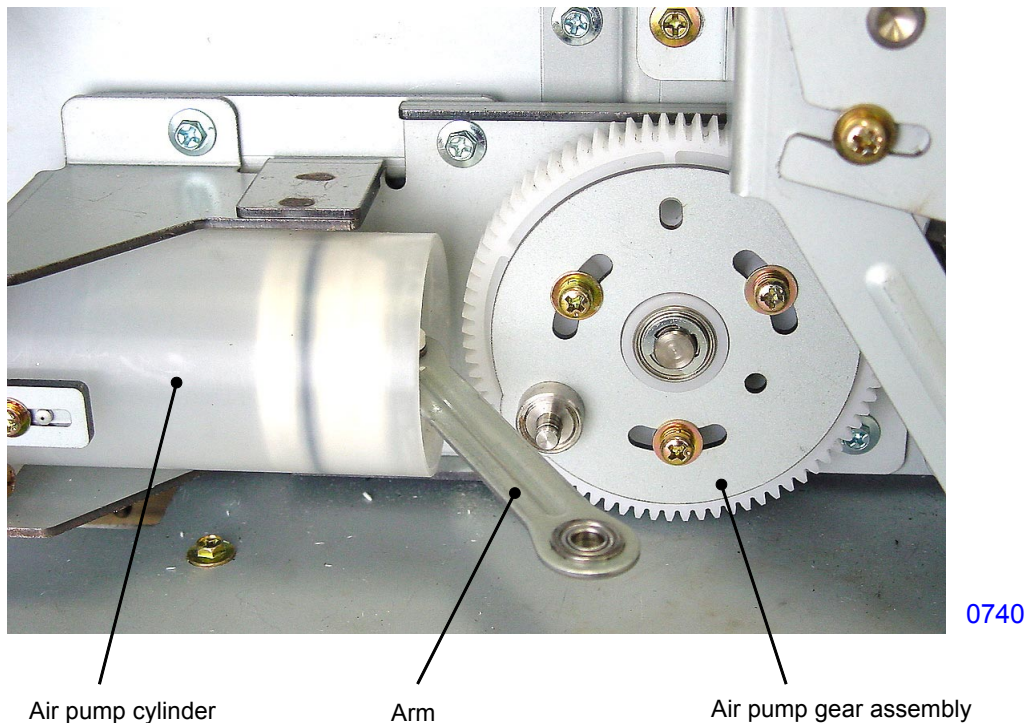
Pressure lever;spring

0739

10. Removing the O-ring, Piston and Cylinder of the Air Pump.

- (1) Switch off the machine power, remove the rear cover, and swing open the PCB bracket of the power supply PCB and mechanical control PCB.
- (2) Remove the E-ring holding the arm of the piston onto the air pump gear assembly, and slide off the arm from the air pump gear assembly.
- (3) Rotate the piston assembly 90 degrees, pull the piston out to the tip edge of the air pump cylinder and swing the arm out towards you to make room for the air pump gear assembly to come out.
- (4) Remove the E-ring on the air pump gear assembly and detach the gear assembly from the machine.
- (5) Pull the piston assembly out from the air pump cylinder.

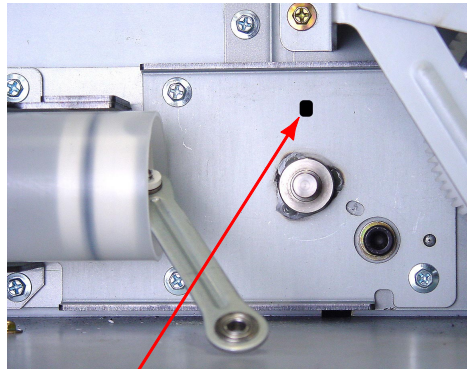
- Precaution in assembly continues on next page -



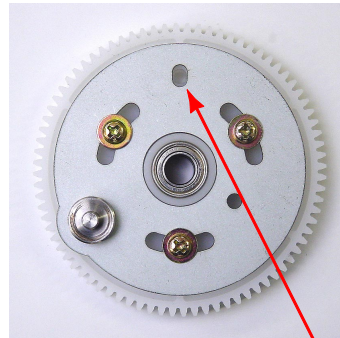
< Piston Assembly >

< Precautions in Reassembly >

- (1) When installing the piston assembly back into the cylinder, make sure that the concave side of the rib on the arm faces out.
- (2) When installing the air pump gear assembly back on the machine, make sure the machine is at its position-B. Align the position-B alignment hole on the air pump gear assembly aligns with the position-B hole on the air pump base.

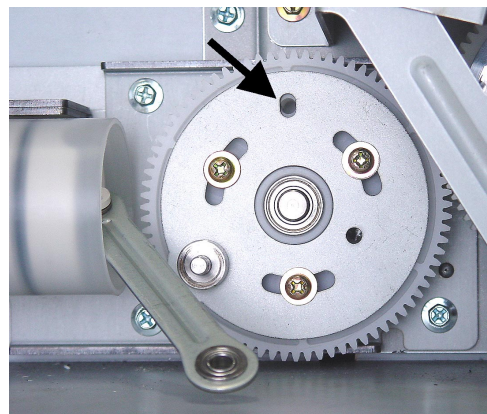


Position-B hole on the air pump base



0743

Position-B alignment hole on the air pump gear assembly.



0744

Removing the O-ring

- (6) Remove the O-ring from the piston assembly.



0745

<< Precaution in Reassembly >>

Apply white plastic grease on the O-ring.

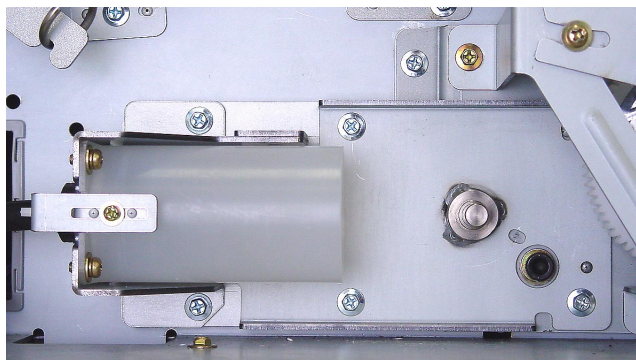
Removing the Air Pump Cylinder

(6) Remove screws (M4x8: 5pcs) and detach the air pump base.

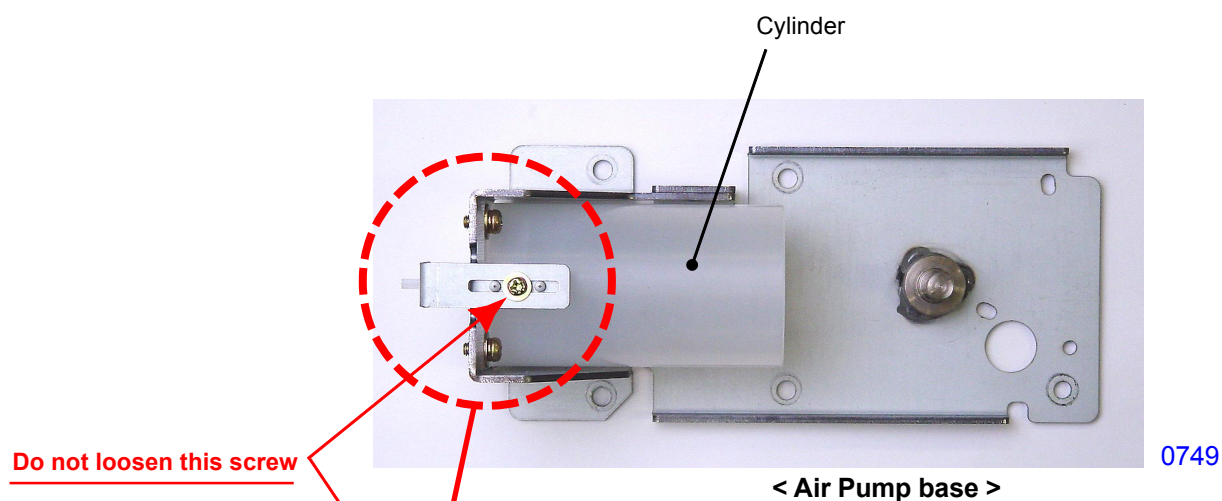
(7) Remove screws (M4x8: 4pcs) and detach the air pump cylinder.

Caution: (1) Be careful not to misplace the air release valve and the spring.

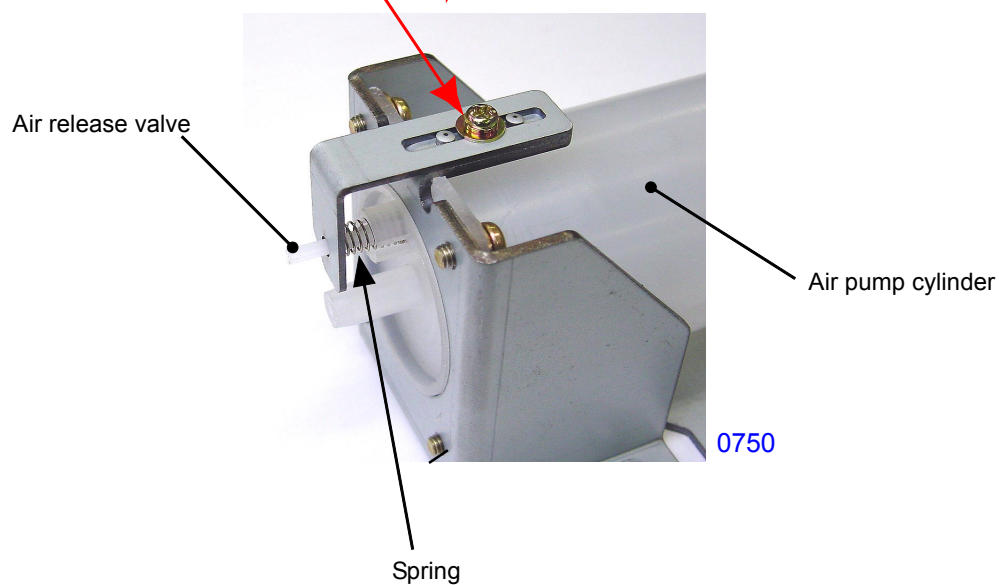
(2) Do not loosen the one screw indicated on the photograph below.



0748

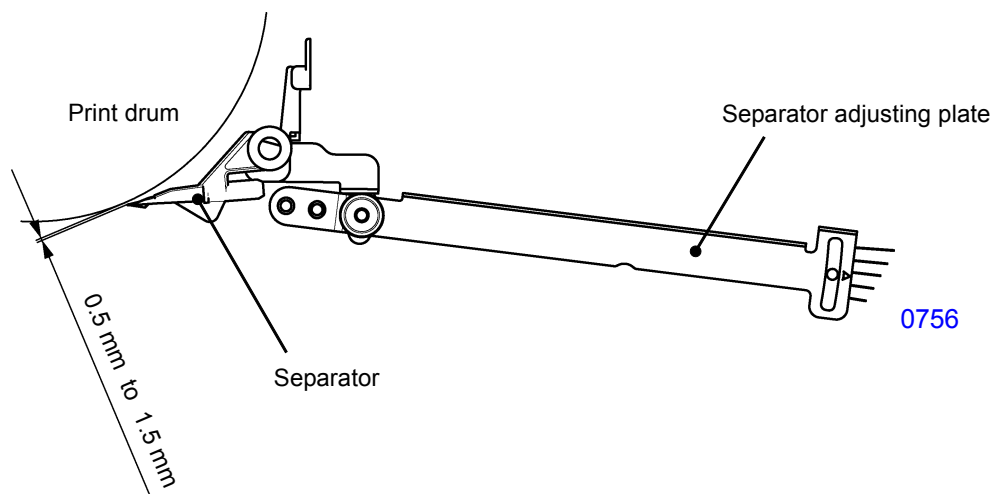
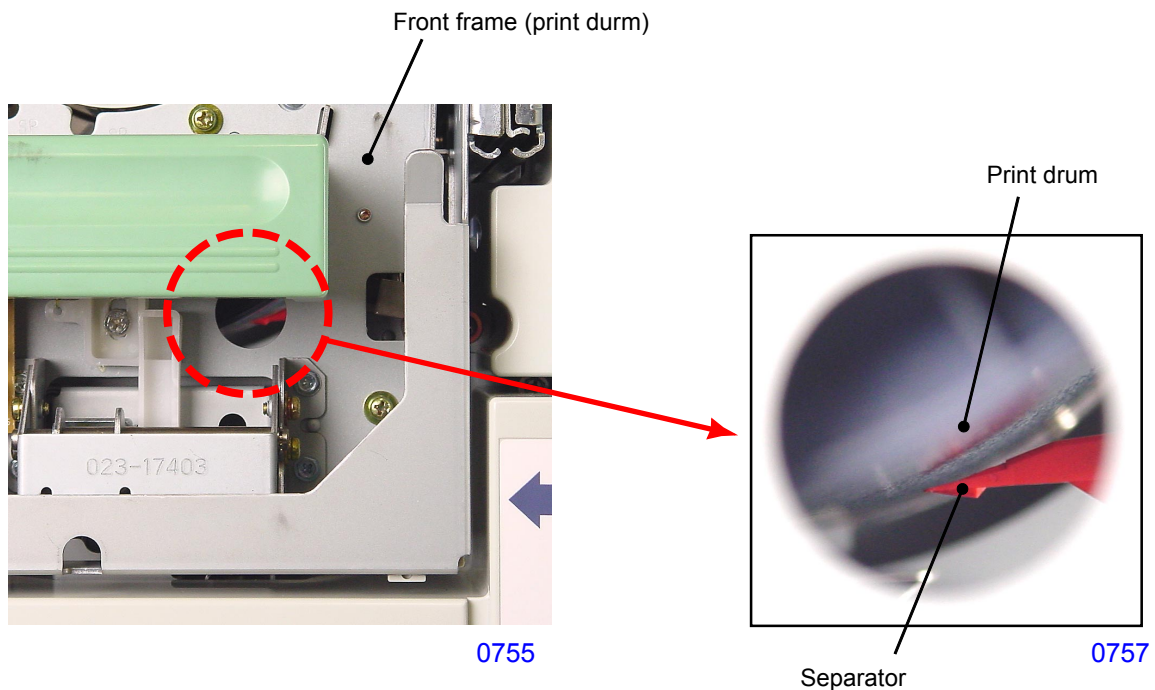


0749



0750

The gap between the tip of the separator and the surface of the print drum should be adjusted to 1mm plus or minus 0.5mm. Note that one graduation scale changes the gap by 1mm. Tighten the two screws after the adjustment.



Symptoms

- (1) If the tip of the separator touches the print drum surface, it will scratch the surface of the master, causing a black line in the center of the prints.
- (2) If the gap is too wide, the separator does not lift the paper off the print drum and causes paper jam on the print drum.

CHAPTER 8: PRINT DRUM SECTION

Contents

MECHANISM

- 1. Master on the Drum Check Mechanism (Before Printing) 8-2
- 2. Print Drum Set Mechanism 8-3
- 3. Print Drum Rotation Mechanism 8-4
- 4. Inking Mechanism 8-5

DISASSEMBLY

- 1. Removing the Drum Lock Sensor, Drum Solenoid, Drum Safety Switch 8-6
- 2. Removing the Screen Assembly 8-8
- 3. Removing the Master Clamp Base Assembly 8-10
- 4. Removing the Drum Body 8-11
- 5. Removing the Ink Scraper Plate Assembly F & R 8-14
- 6. Removing the Ink Pump Assembly 8-15
- 7. Removing the Ink Bottle Guide Assembly 8-16
- 8. Removing the Ink Bottle Lock Assembly & Antenna PCB 8-17
- 9. Removing the Ink Sensor PCB 8-18
- 10. Removing the Print Drum PCB 8-19
- 11. Removing the Drum Joint 8-20
- 12. Removing the Flange-R 8-21
- 13. Removing the Flange-F 8-22
- 14. Removing the Squeegee Roller 8-23

ADJUSTMENT

- 1. Squeegee Gap Adjustment 8-27
- 2. Squeegee Pressure Balance Adjustment 8-29

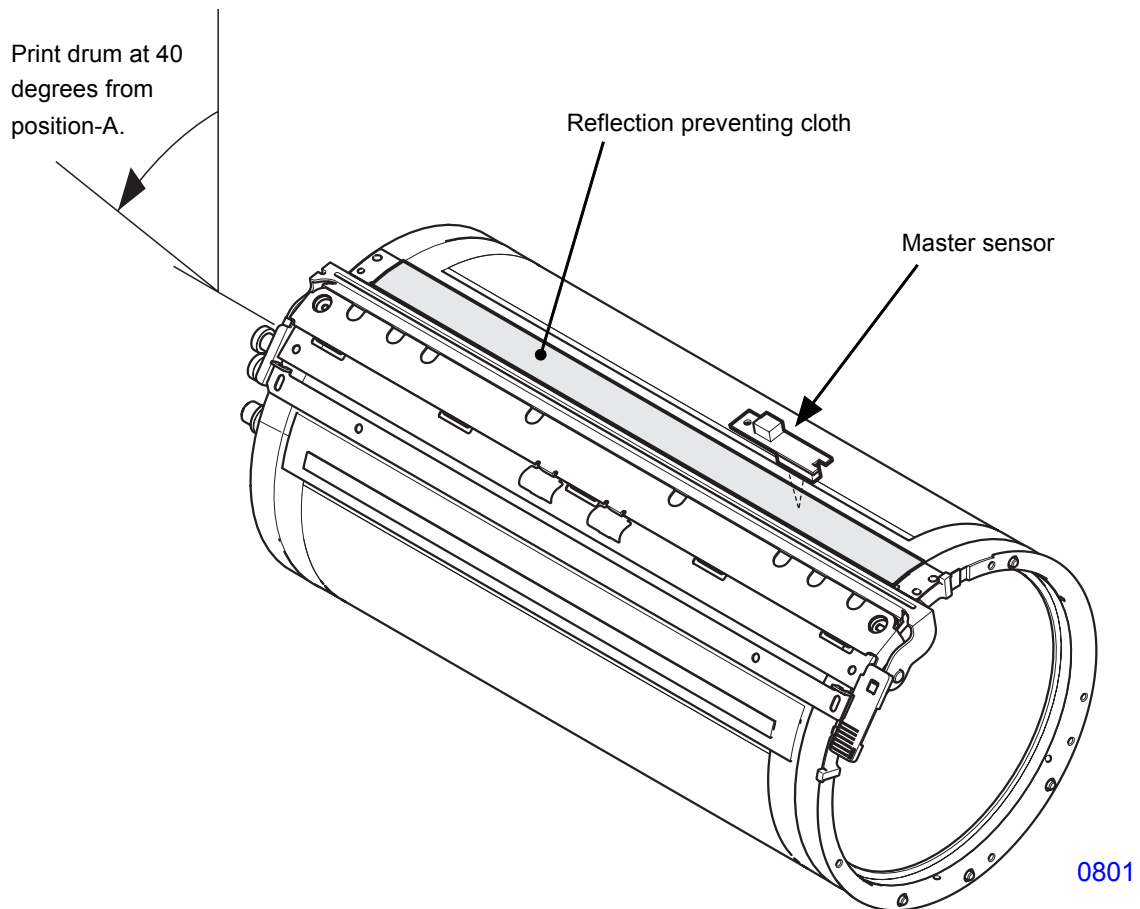
Mechanism

1. Master on the Drum Check Mechanism (Before Printing)

The machine checks for the presence of the master on the print drum at the start of a print job..

With a push of the Start key to begin the printing operation, the print drum starts to rotate and at drum angle 40 degrees from the position-A, the master sensor checks if a master is wrapped on the print drum or not.

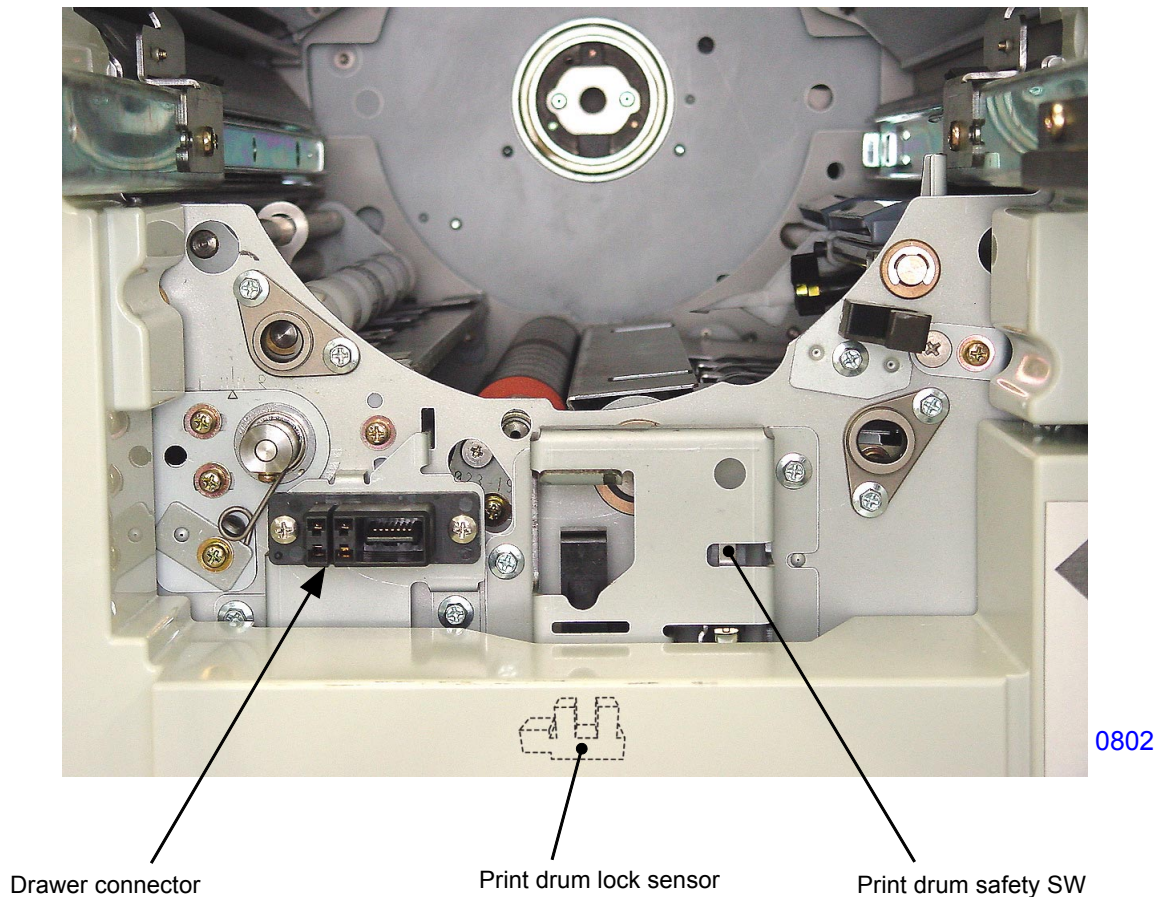
If a master is found on the print drum, the printing operation takes place, but if a master is not detected, the machine stops. Once the master is detected on the print drum, the information is memorized on the machine. The master sensor no longer checks for the master on the print drum from the next printing job until a new master is made, print drum is pulled out of the machine, or the power to the machine is turned OFF.



2. Print Drum Set Mechanism

The removal and insertion of the print drum is done at print drum position-B stop position. Whether the print drum is set in the machine or not is checked by the drawer connector of the print drum, print drum safety SW and print drum lock sensor.

When the print drum safety SW is OFF, the main motor, clamp motor, master removal vertical transport motor and master compression motor will not go ON.



3. Print Drum Rotation Mechanism

When the main motor rotates, the drive is transferred in following sequence.

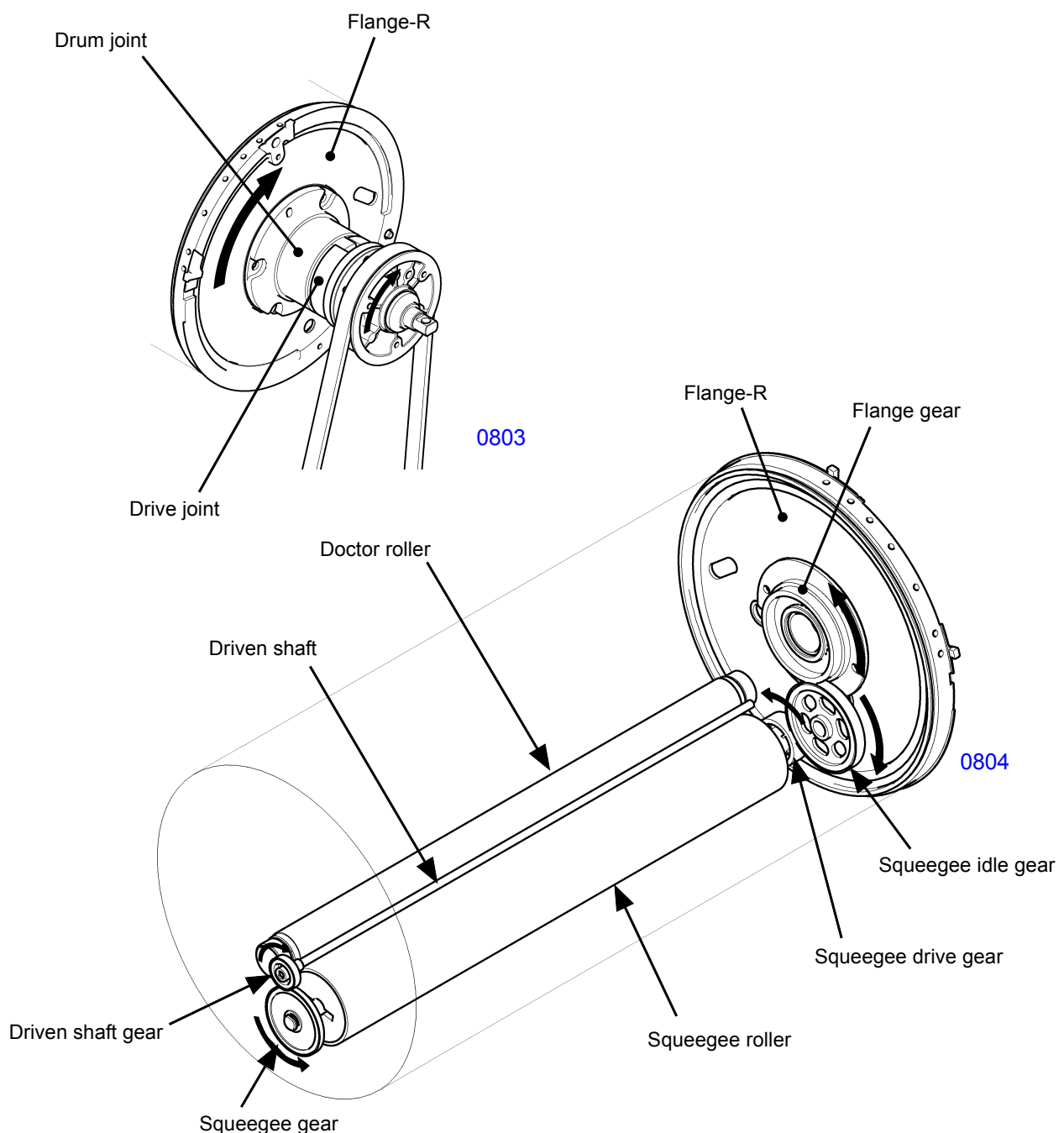
The main motor drive is transferred to the main shaft assembly via main belt, and via the drive joint the drum joint receives the drive and rotates the flange-R of the print drum.

The flange gear on flange-R drives the squeegee idle gear and the drive is transferred to the squeegee drive gear to rotate the squeegee roller.

As the squeegee roller rotates, the squeegee roller attached on the squeegee roller shaft rotates and transfers the drive to the driven shaft gear and rotates the driven shaft.

The squeegee drive gear contains a one-way clutch to prevent the squeegee roller from rotating in the reverse direction if by accidentally the print drum is rotated in the opposite direction by hand.

The doctor roller is fixed in position and does not rotate.



4. Inking Mechanism

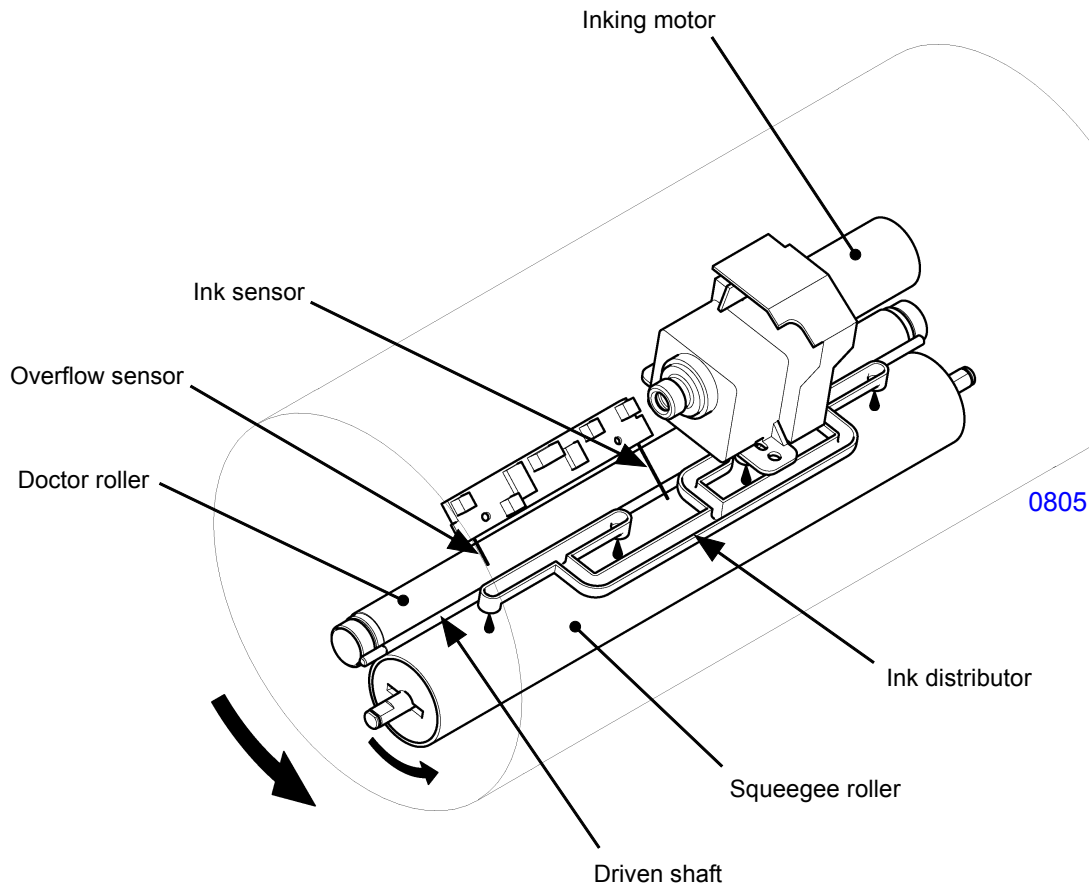
The ink is pumped into the print drum from the ink bottle when the ink sensor in the print drum no longer detects the ink in the drum while the drum is rotating with the main motor ON.

The pumped ink is distributed on to the squeegee roller from the holes on the ink distributor.

The ink distributed on the squeegee roller makes a long ink bead around the driven roller located between the squeegee roller and doctor roller. Once the bead of ink touches the ink sensor the ink motor deactivates to stop the inking action.

There is a small gap made between the doctor roller and squeegee roller. From this gap the ink from the bead of ink transfers onto the inner surface of the print drum via the squeegee roller.

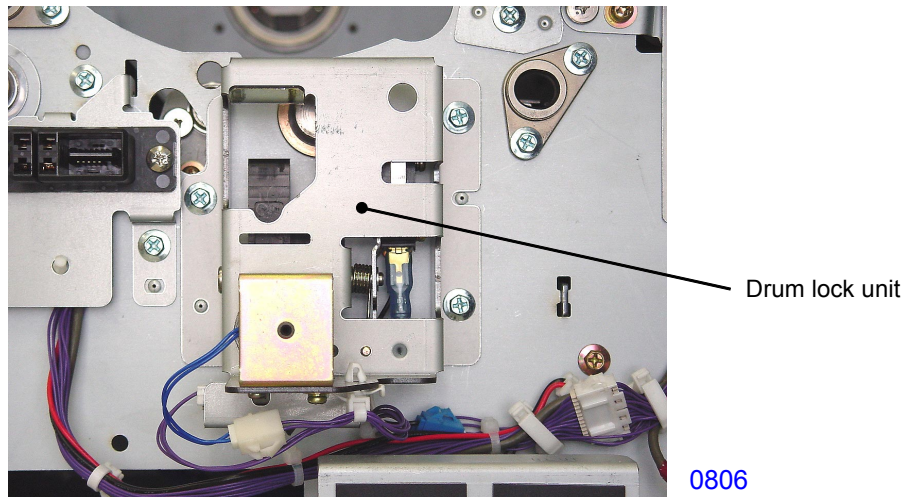
The overflow sensor is located in the print drum to stop the machine to prevent ink overflow in the case the bead of ink for some reasons becomes too large.



Disassembly

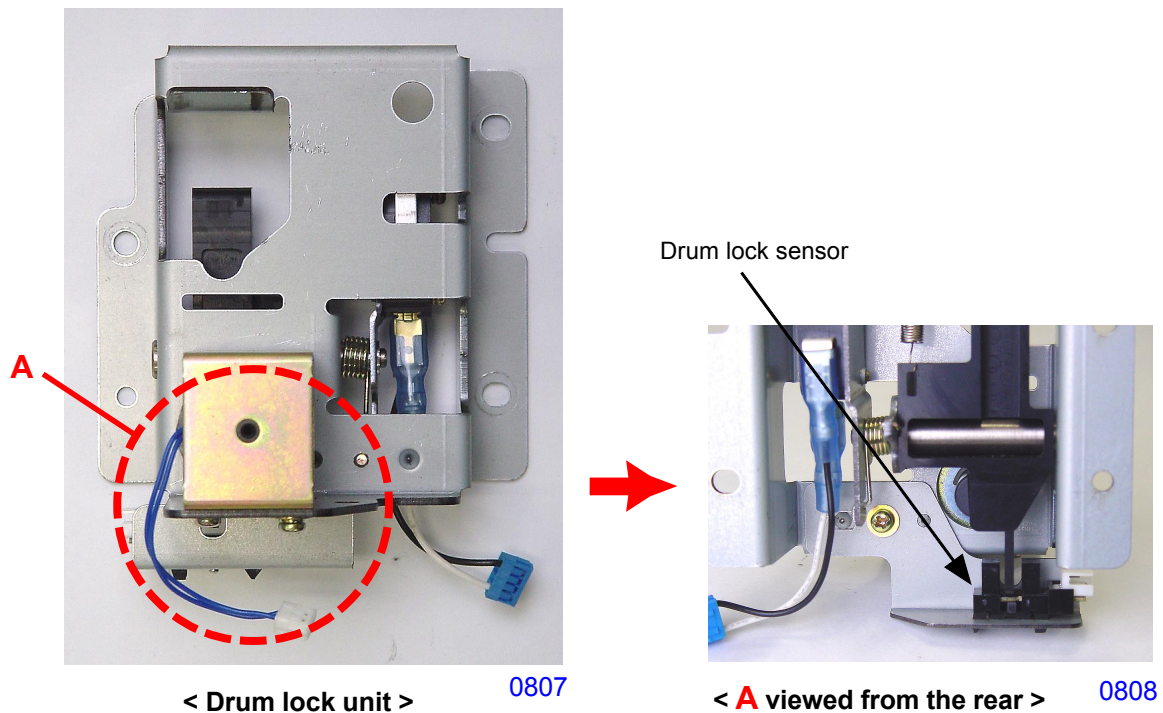
1. Removing the Drum Lock Sensor, Drum Solenoid, Drum Safety Switch

- (1) Remove the print drum from the machine, switch off the machine power and remove the front cover.
- (2) Remove screws (M4x8: 3pcs), unplug the wire harness connectors (3 locations), and remove the drum lock unit.



Removing the print drum lock sensor

- (3) Remove a screw (M3x6: 1pc) and detach the print drum lock sensor from the drum lock unit together with the sensor bracket.



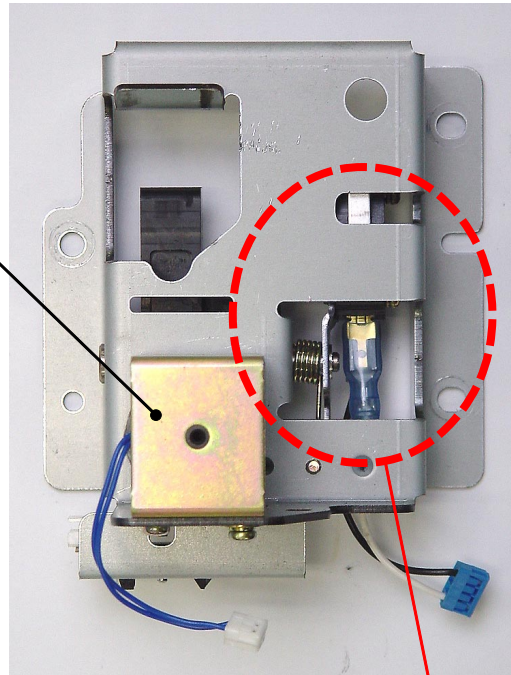
Removing the print drum lock solenoid

- (3) Remove screws (M3x6: 2pcs) and detach the print drum lock solenoid.

Removing the print drum safety switch

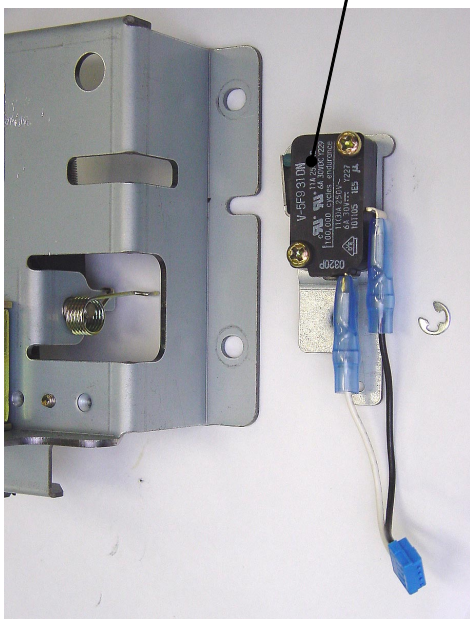
- (3) Unhook the torsion spring, remove the E-ring, and detach the drum safety switch together with the switch bracket.

Print drum lock solenoid

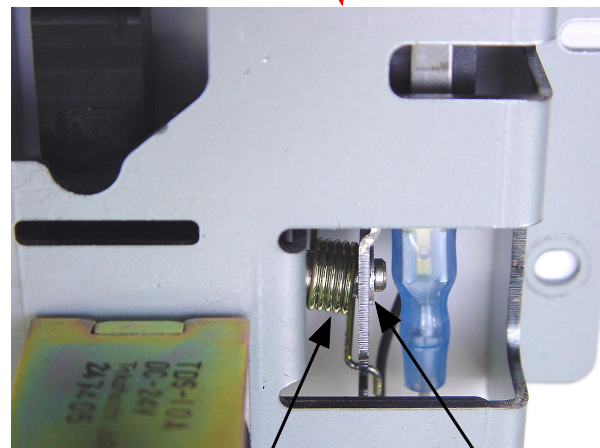


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Print drum safety switch



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Torsion spring

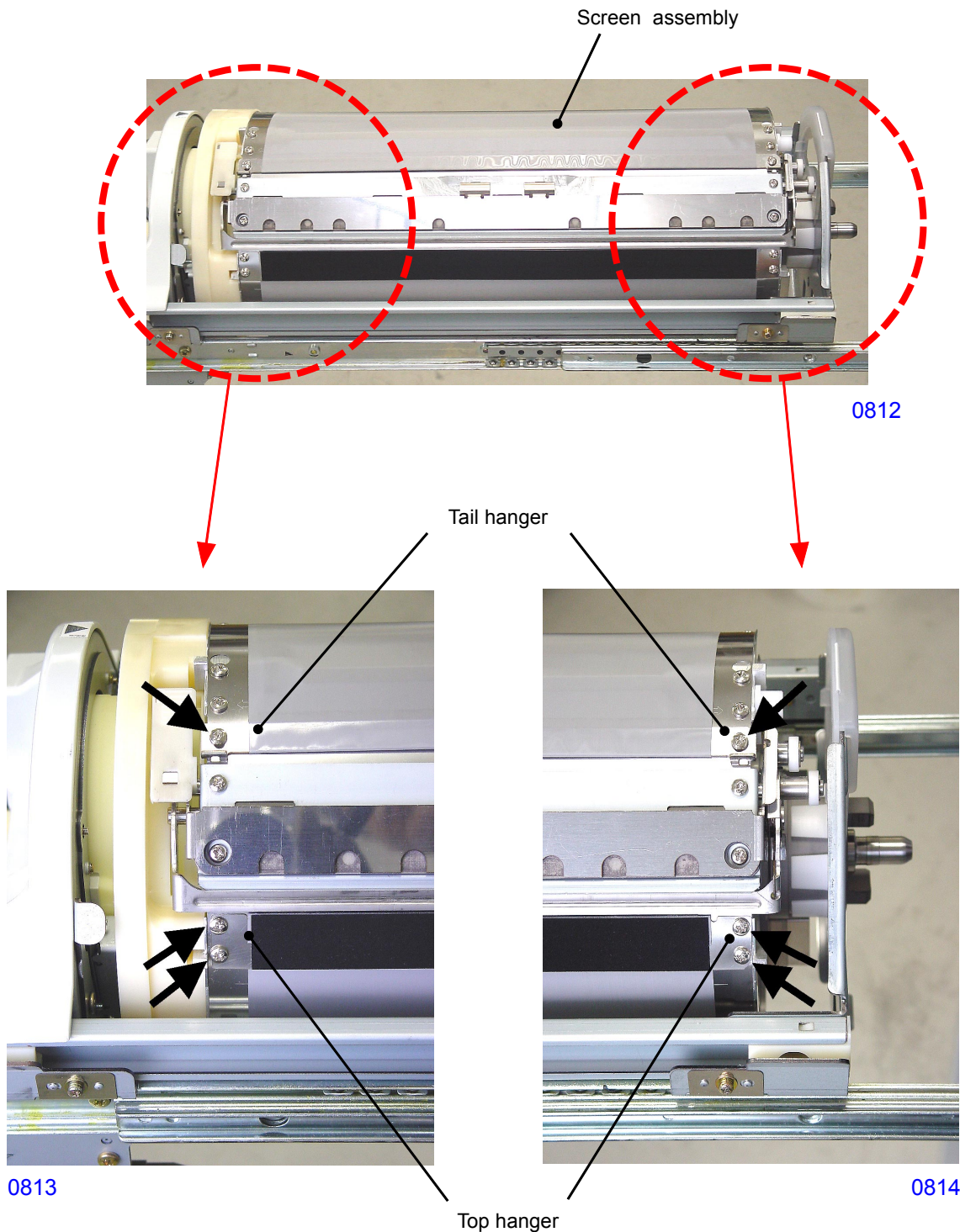
E-ring

2. Removing the Screen Assembly

- (1) Make a confidential master on the print drum and pull the print drum out of the machine.
- (2) Remove screws from the tail hanger (M3x6: 2pcs).
- (3) Remove screws from the top hanger (M3x6: 4pcs) and remove the screen assembly from the print drum.

Caution: Do not fold or bend the screen assembly during the removal or installation.

Refer to the next page for the precautions in reassembly.

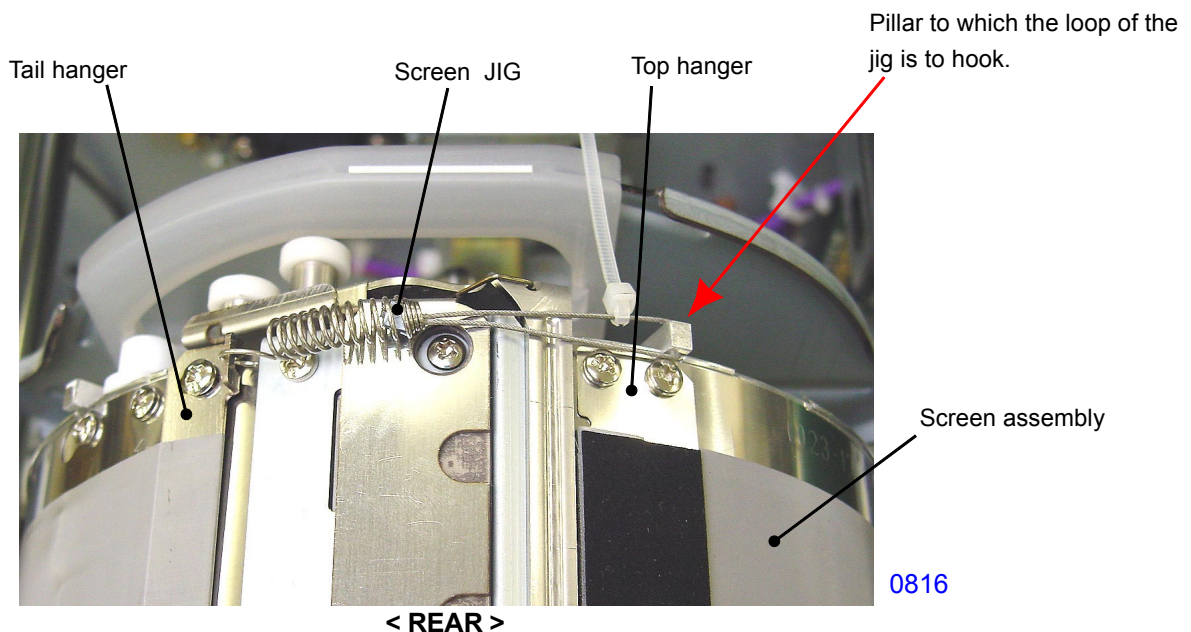


< Precautions in Reassembly >

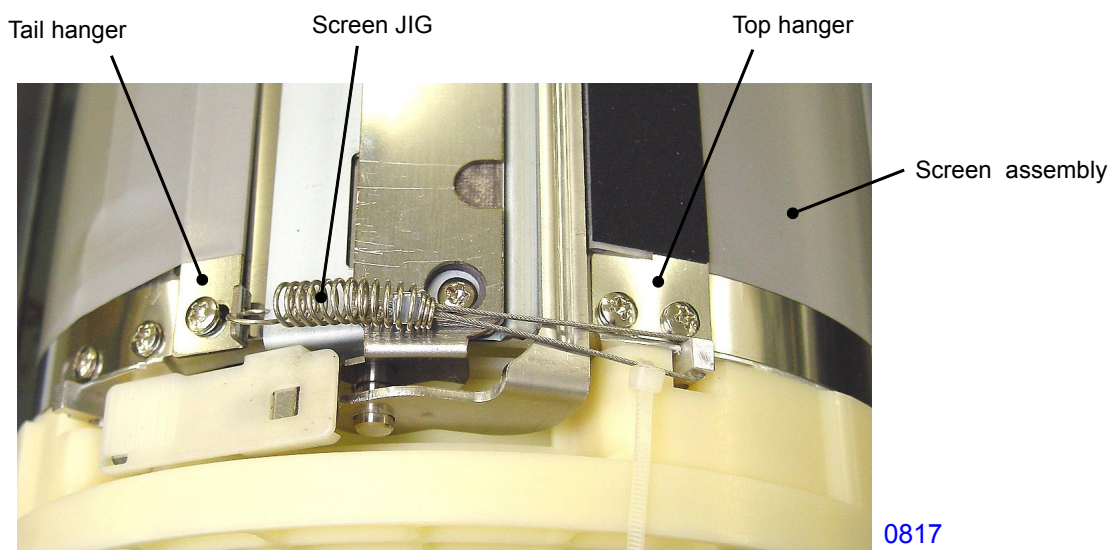
- (1) Mount and screw the top hanger on the print drum and wrap the screen around the drum. Then tentatively attach the screws on the tail hanger, very lightly.
- (2) Hook the screen jigs through the holes on the left and right of the tail hanger, pull the screen jig and hook the loop end of the jigs on the short pillars on the left and right drum flanges, located close to where the top hanger is. This is to tension the screen assembly tightly and evenly around the print drum.
- (3) With the screen assembly tightly wrapped around the drum by the screen jig, tighten the screws on the tail hanger.
- (4) Remove the screen jigs from the print drums once the screws on the tail hanger are tightened.



0815

< Screen JIG >

0816

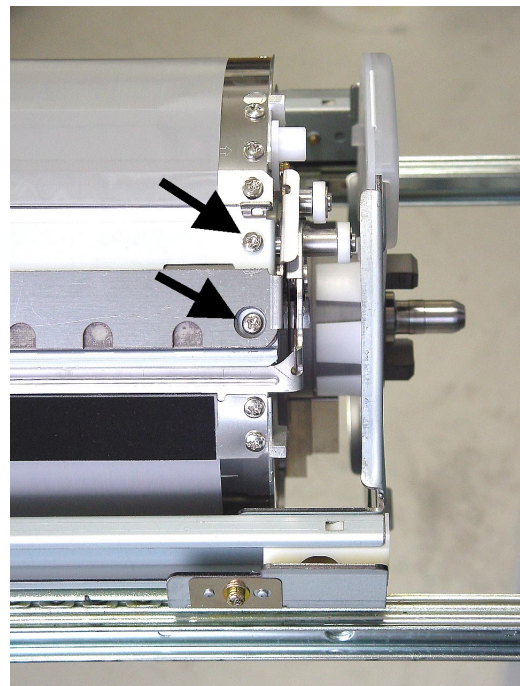
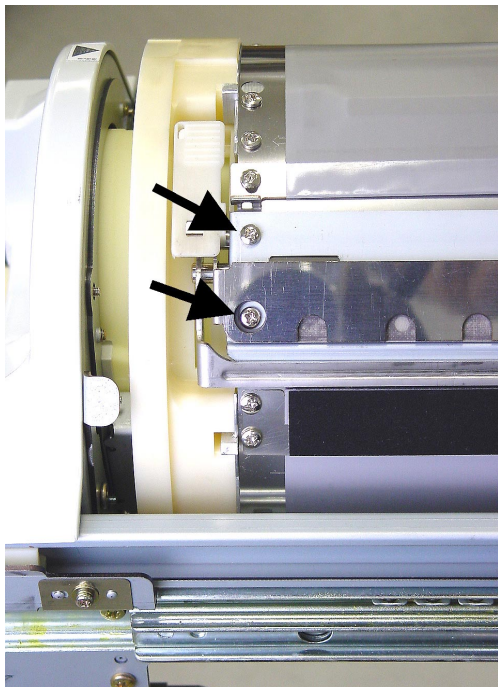
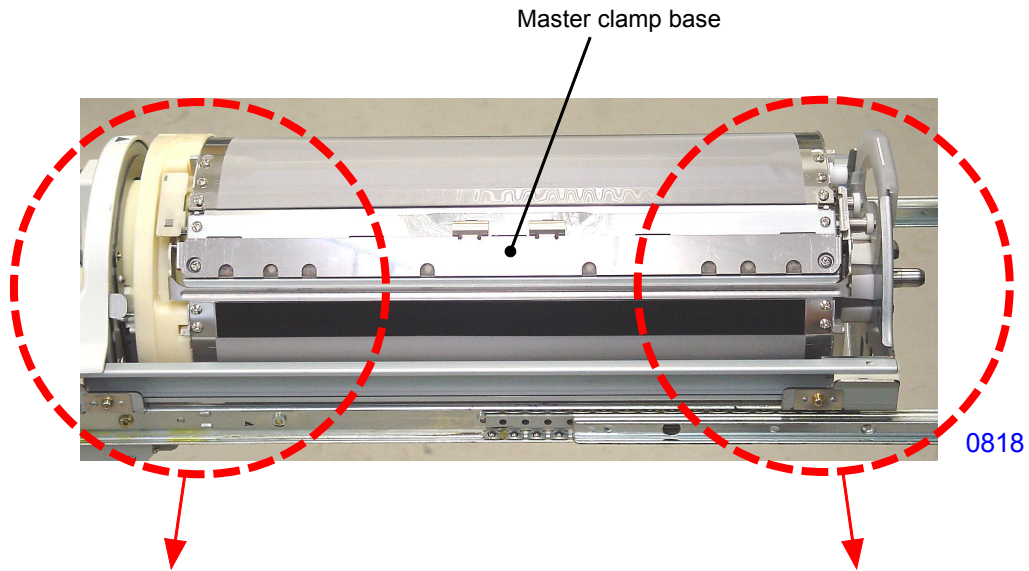
< REAR >

0817

< FRONT >

3. Removing the Master Clamp Base Assembly

- (1) Make a confidential master on the print drum and pull out the drum from the machine.
- (2) Remove screws (M3x6: 4pcs) and detach the master clamp base assembly from the print drum.

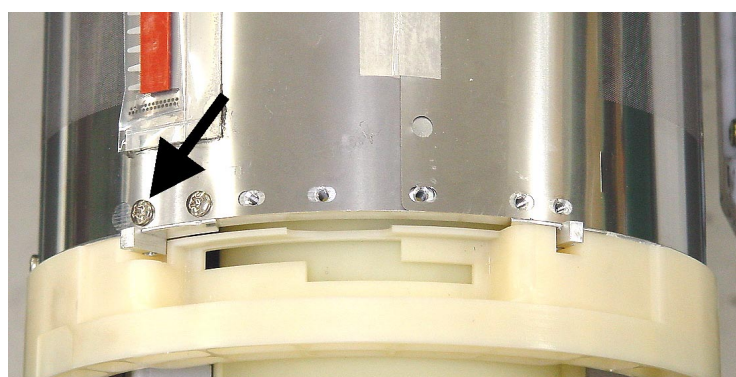
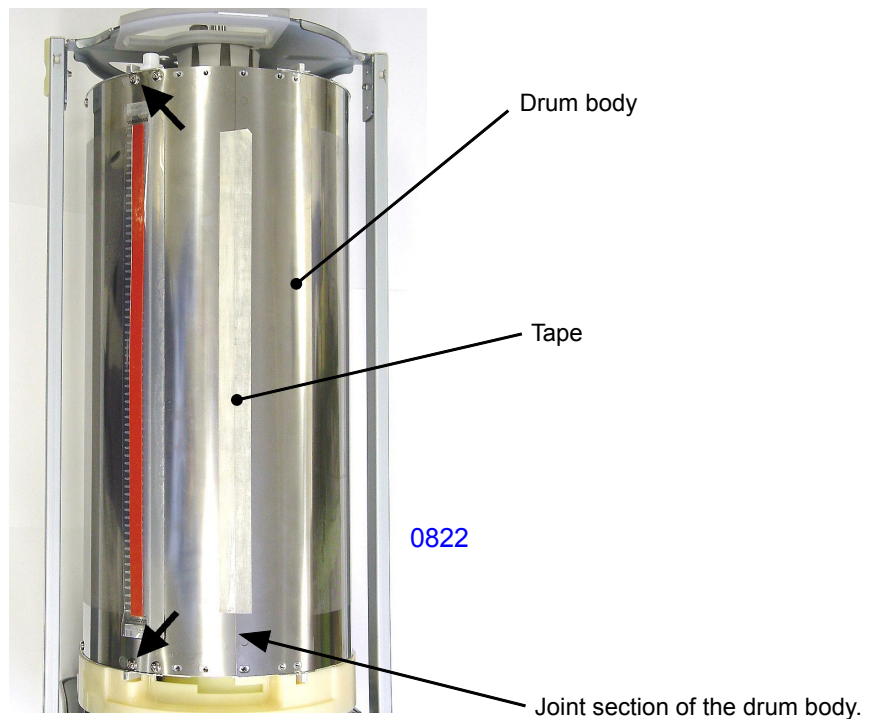


< Master Clamp Base >

4. Removing the Drum Body

- (1) Make a confidential master on the print drum and pull out the drum from the machine.
- (2) Remove the following components.
 - Screen assembly
 - Master clamp base assembly
- (3) Loosen screws (M3x6: 2pcs) on the potbelly-shaped hole towards the tail end of the drum body (indicated by the arrow marks on the photograph), and remove all other remaining screws (M3x6: 10pcs).
- (4) Holding the drum body, so it does not pop open, peel off the tape which holds the top edge of the drum body onto the tail end of the drum body. (The tape will be reused in assembly.)
- (5) Slide the drum body and unhook the potbelly-shaped holes from the two loosened screws, and then remove the drum body.

- Precautions in assembly continues on next page -

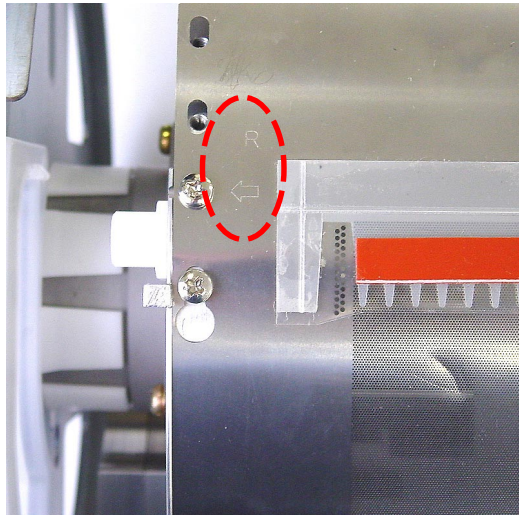


< Enlarged View >

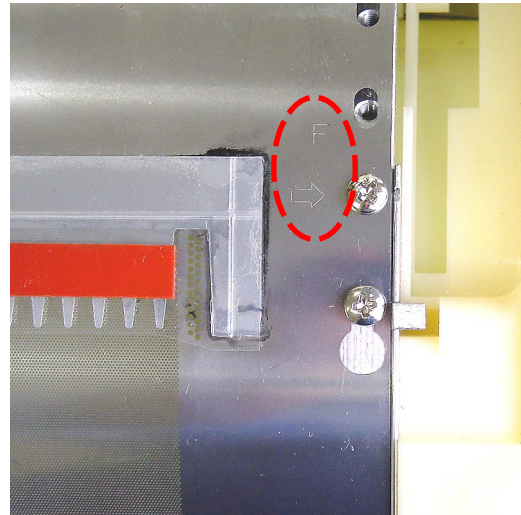
< Precautions in Reassembly >

- (1) On the outskirts of the tail end of the drum body, close to the drum flanges are marked with arrow marks and F & R imprints. The F imprint should face the flange-F, and R imprint should face the flange-R. With the drum body in this direction, hook the potbelly shaped holes of the drum body onto the two loosened existing screws on the drum flanges F and R.
- (2) Tentatively place one screw each on the screw holes which the arrow marks point to.

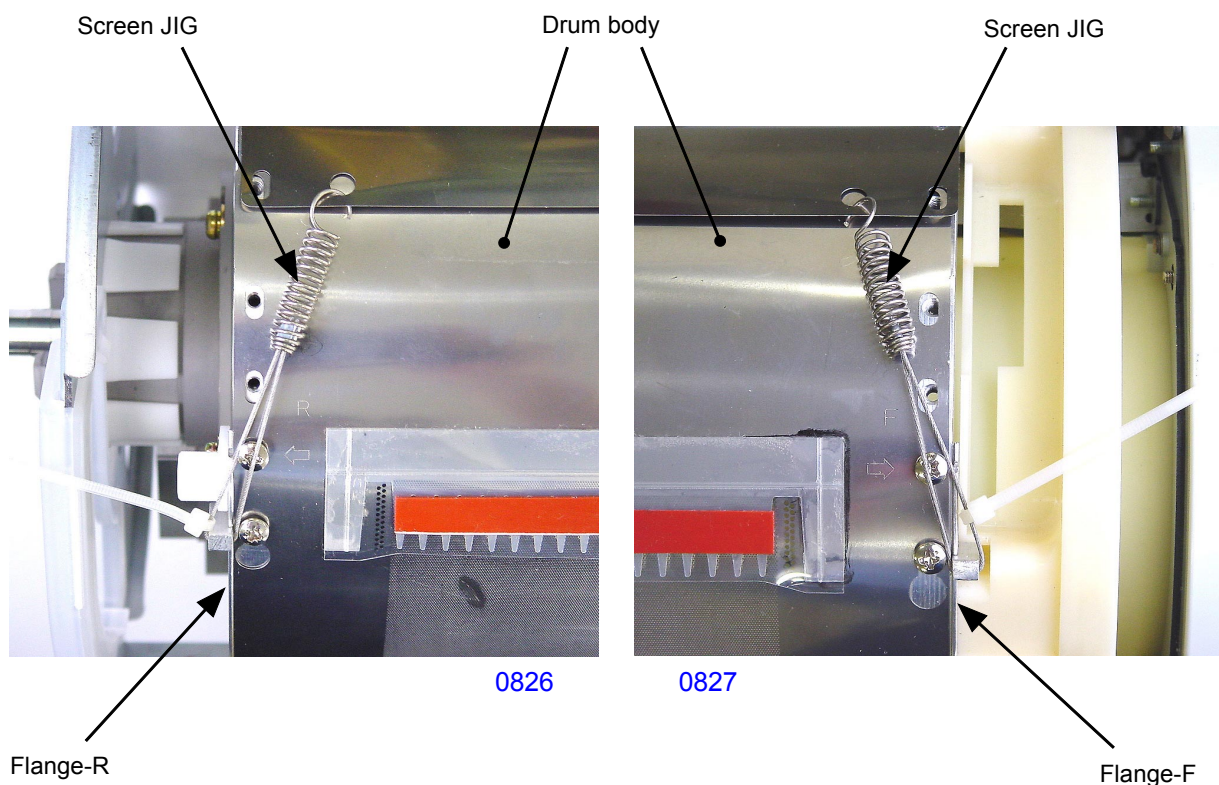
0824



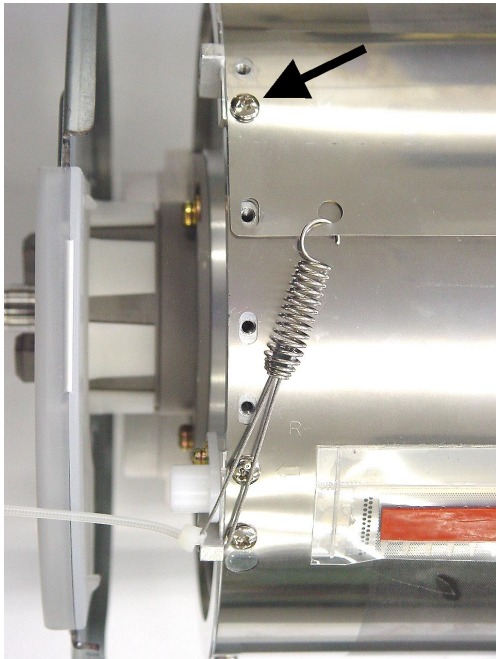
0825



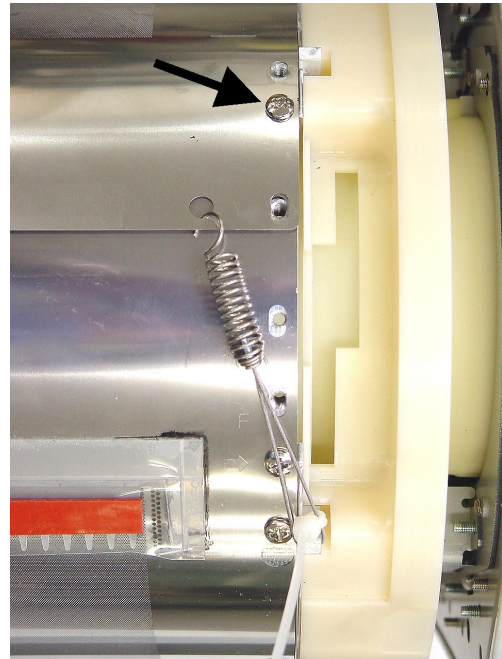
- (3) Hook the screen jigs into the holes on the drum body located at the inner edge of the top of the drum body, and hook the loop ends of the jig on the pillars on the drum flanges F and R.
- (4) Push the flange-F and flange-R tightly against the drum body, and tighten the two screws at the arrow mark which was previously tentatively mounted.
- (5) Likewise, push the flange-F and flange-R tightly against the drum body and tighten the two loose screws at the potbelly holes of the drum body, and then mount and tighten all the remaining screws around the drum body while pushing the flanges tightly against the drum body.



- (6) On the second screw holes from the top at the top end of the drum body, use screws (M3x6: 2pcs from another part of the drum) to tightly hold the drum body onto the drum flanges.

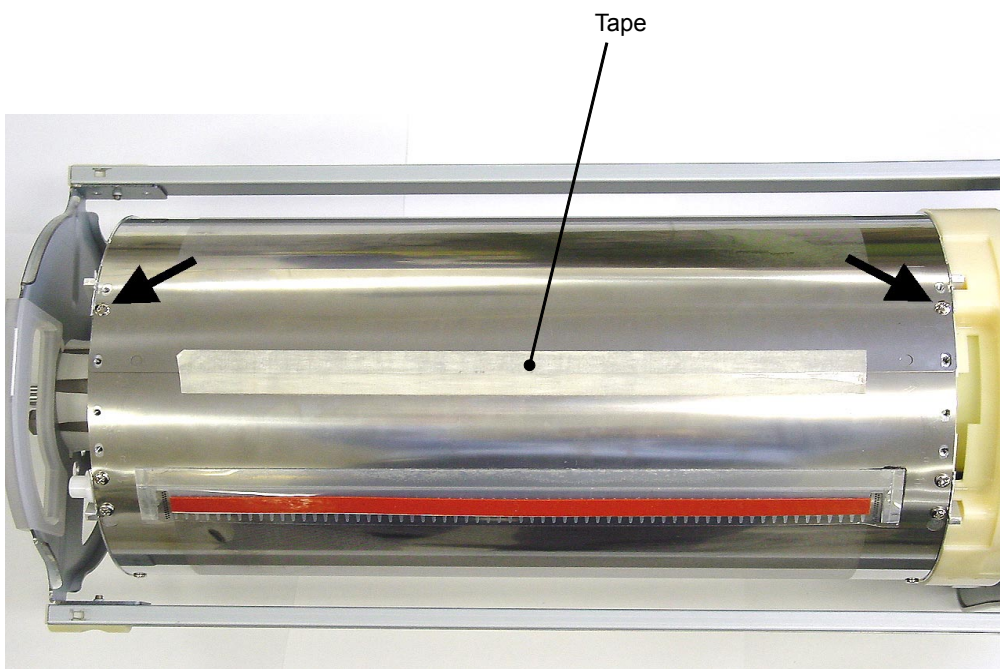


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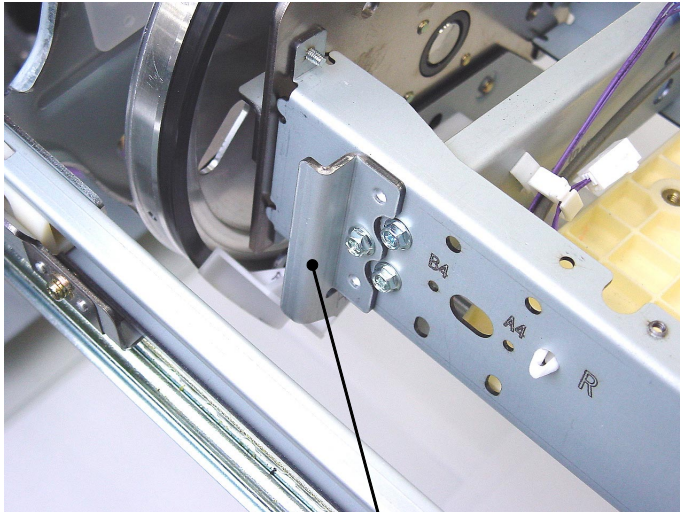
- (7) Remove the screen jigs off the print drum, and place the adhesive tape back on the joint section of the drum body while pushing down the joint section for a tight hold by the tape.
- (8) Remove the two screws used by above step (6).



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5. Removing the Ink Scraper Plate Assembly F & R

- (1) Make a confidential master on the print drum and pull out the drum from the machine.
- (2) Remove the following components.
 - Screen assembly
 - Master clamp base assembly
 - Drum body
- (3) Remove screws (M3x8: 1pc each), and remove the scraper plate assembly F & R.



0831

Ink scraper assembly R



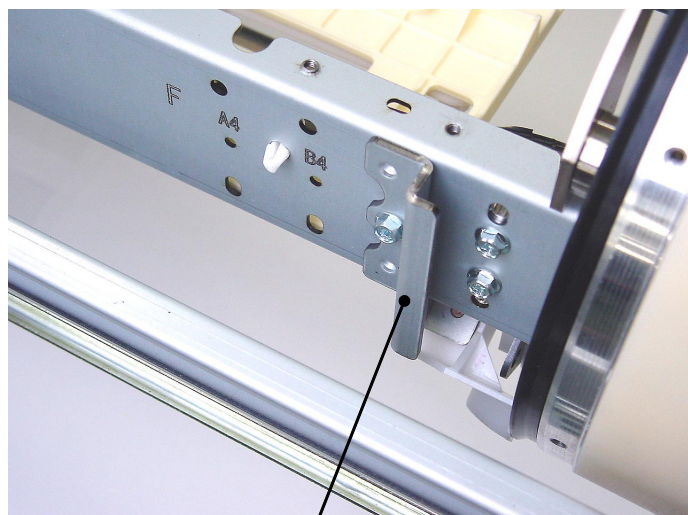
0832

< Ink scraper assembly R >



0834

< Ink scraper assembly F >

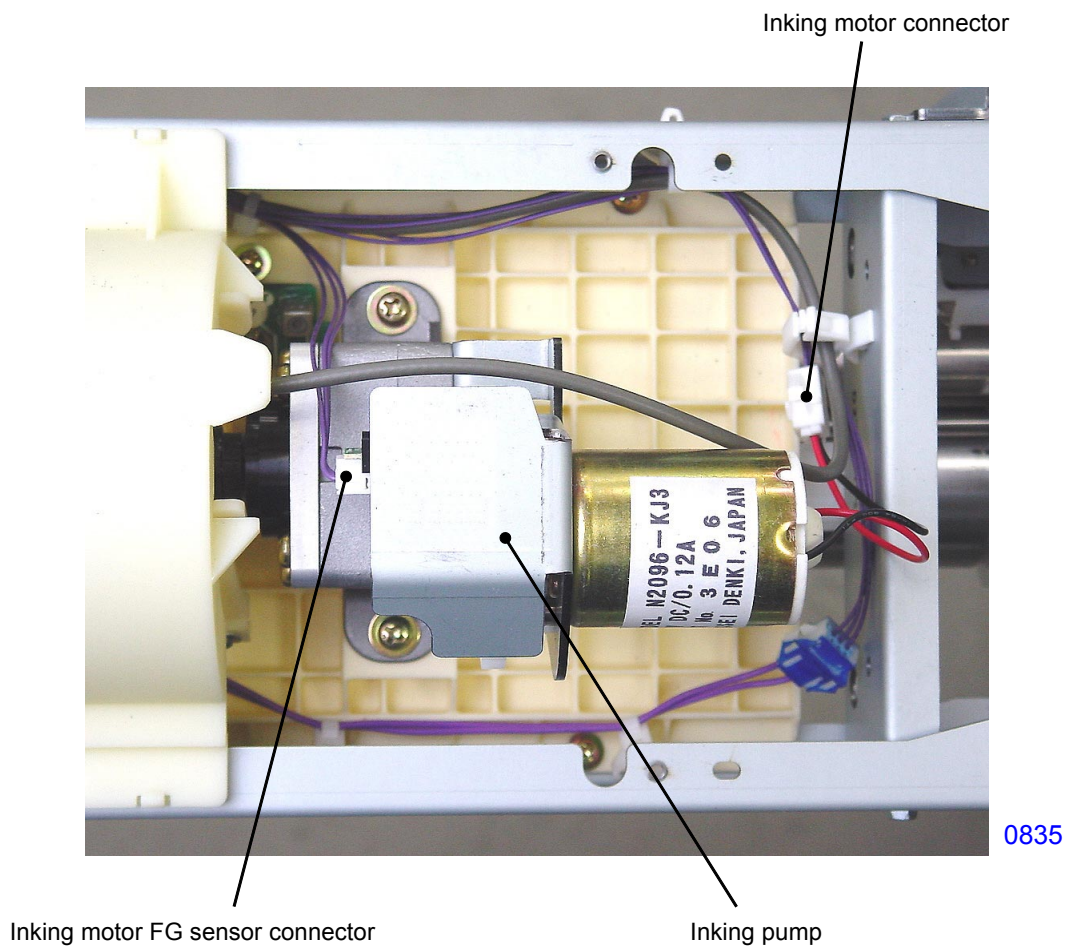


0833

Ink scraper assembly F

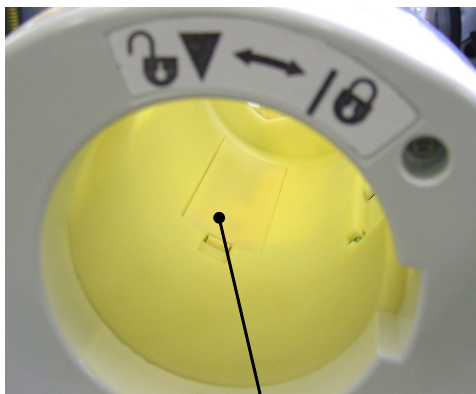
6. Removing the Ink Pump Assembly

- (1) Make a confidential master on the print drum and pull out the drum from the machine.
- (2) Remove the following components.
 - Screen assembly
 - Master clamp base assembly
 - Drum body
- (3) Disconnect the inking motor FG sensor connector and the inking motor connector. Then remove screws (M4x8: 2pcs) and detach the ink pump assembly.



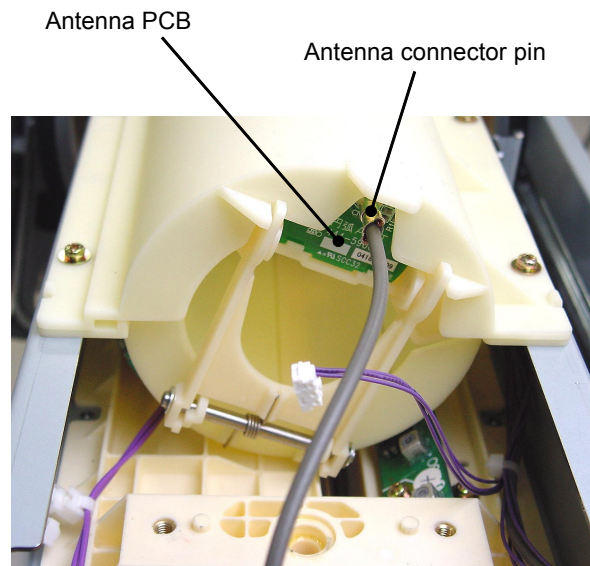
7. Removing the Ink Bottle Guide Assembly

- (1) Make a confidential master on the print drum and pull out the drum from the machine.
- (2) Remove the following components.
 - Screen assembly
 - Master clamp base assembly
 - Drum body
 - Ink pump assembly
- (3) Remove the inspection cap from the inside of the ink bottle guide.
- (4) Gently pull out the connector pin from the Antenna PCB. Then disconnect the ink bottle set switch connector and detach the two reusable bands from the print drum frame.
- (5) Remove screws(M3x8: 4pcs), and lift out the ink bottle guide assembly from the print drum after sliding it towards the center of the drum.



Inspection cap

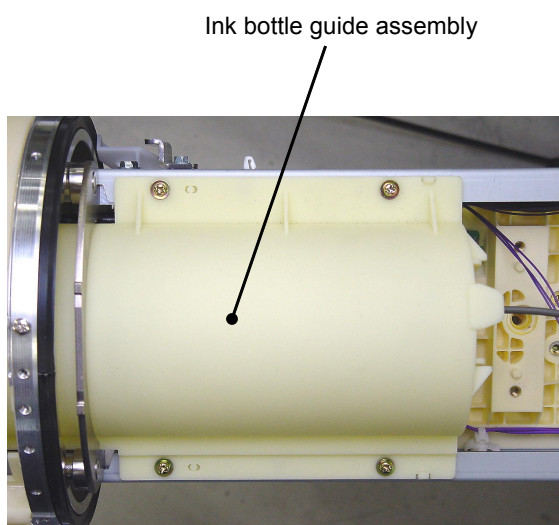
0836



Antenna PCB

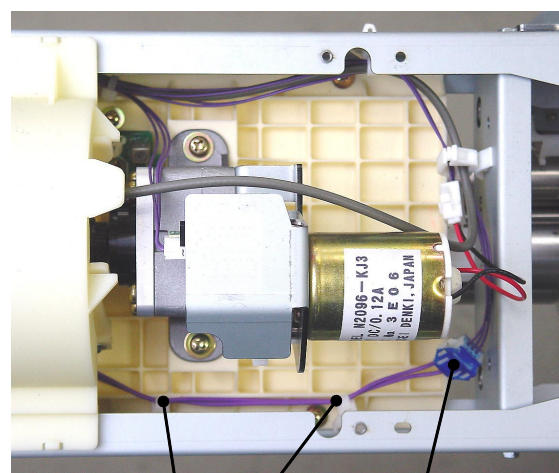
Antenna connector pin

0837



Ink bottle guide assembly

0839



Reusable bands

Bottle set SW connector

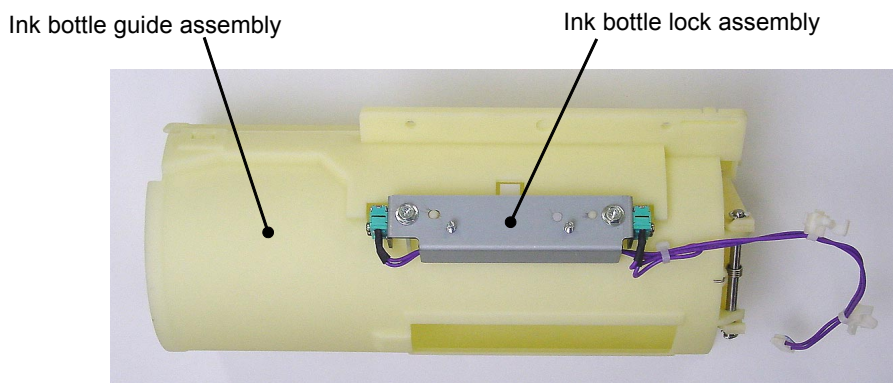
0838

8. Removing the Ink Bottle Lock Assembly & Antenna PCB

- (1) Make a confidential master on the print drum and pull out the drum from the machine.
- (2) Remove the following components.
 - Screen assembly
 - Master clamp base assembly
 - Drum body
 - Ink pump assembly
 - Ink bottle guide assembly

Removing the Ink Bottle Lock Assembly

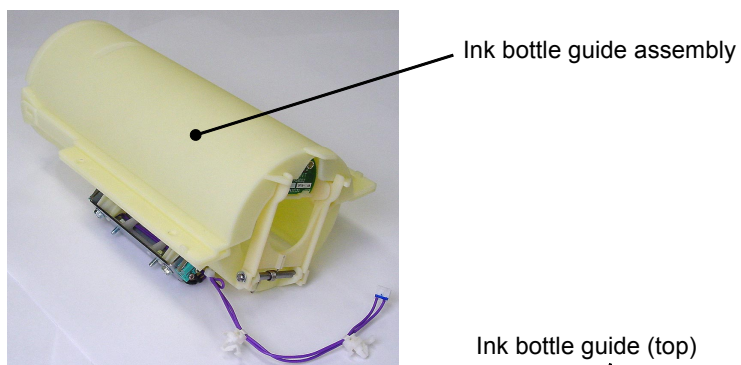
- (3) Remove screws (M3x8: 2pcs) and detach the ink bottle lock assembly from the ink bottle guide assembly.



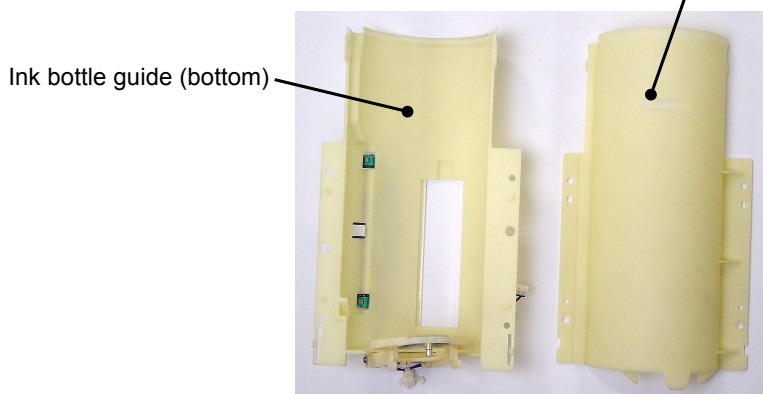
0840

Removing the Antenna PCB

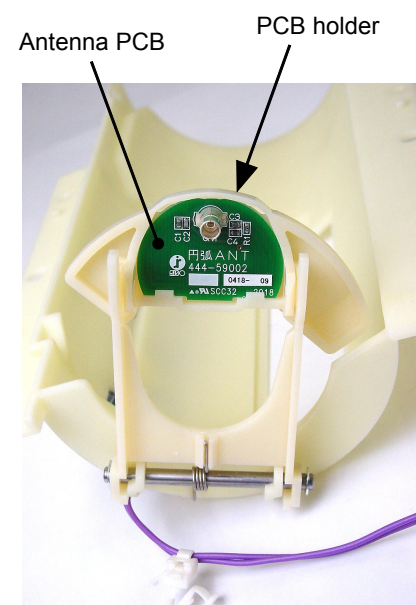
- (3) Separate the ink bottle guide (top) from the ink bottle guide (bottom) by unhooking the claws.
- (4) Remove the antenna PCB from the PCB holder.



0841



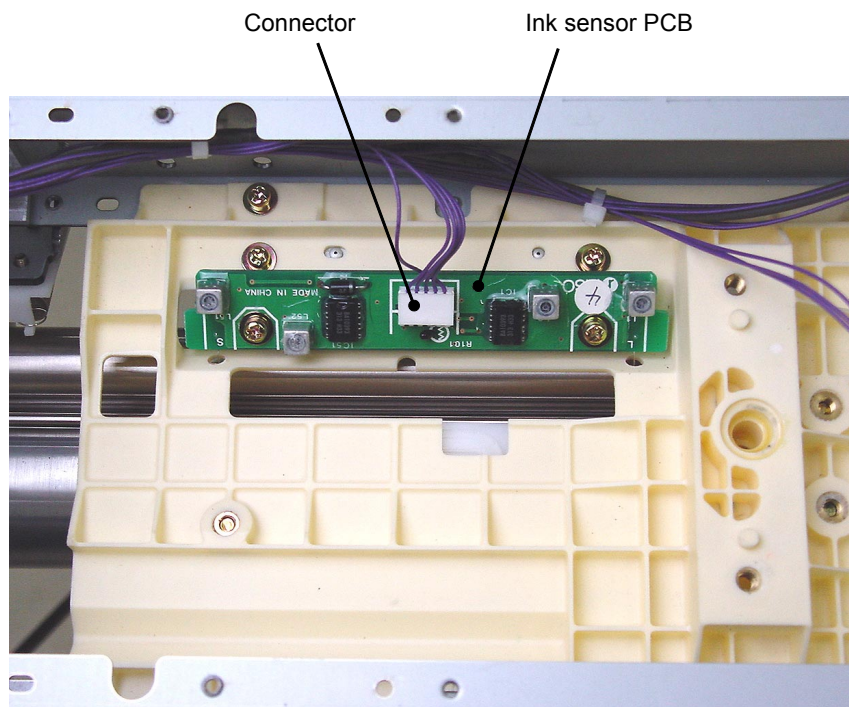
0843



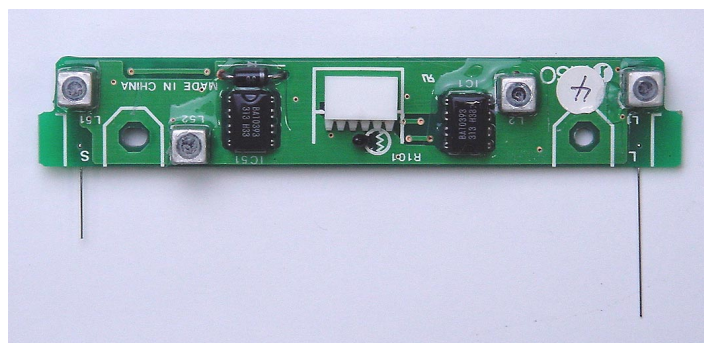
0842

9. Removing the Ink Sensor PCB

- (1) Make a confidential master on the print drum and pull out the drum from the machine.
- (2) Remove the following components.
 - Screen assembly
 - Master clamp base assembly
 - Drum body
 - Ink pump assembly
 - Ink bottle guide assembly
- (3) Disconnect the ink sensor PCB connector, remove screws (M3x8: 2pcs) and detach the ink sensor PCB.



0844

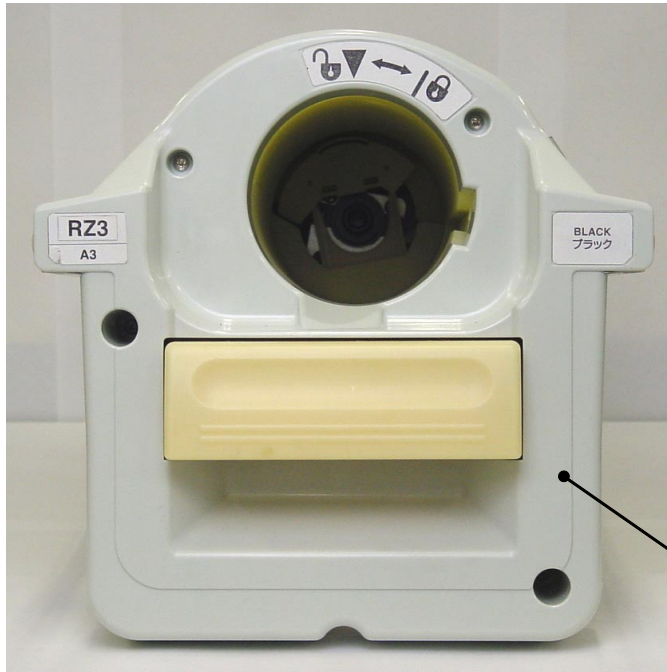


0845

< Ink Sensor PCB >

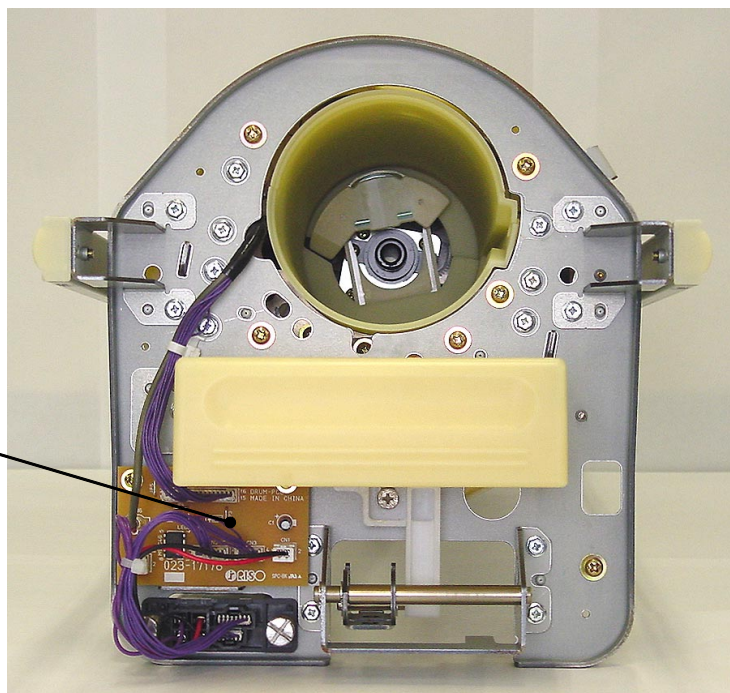
10. Removing the Print Drum PCB

- (1) Remove the print drum from the machine, and detach the drum cover from the drum by removing screws (M3x6: 4pcs).
- (2) Disconnect wire harness connectors (6 locations), remove screws (M3x8: 2pcs) and detach the print drum PCB.



Drum cover

0846



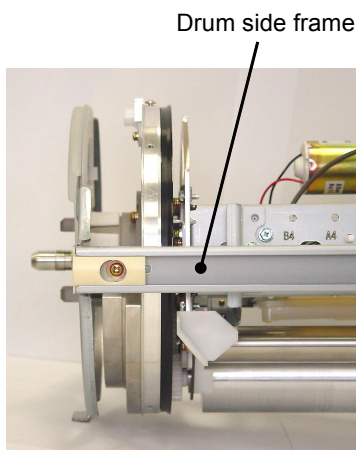
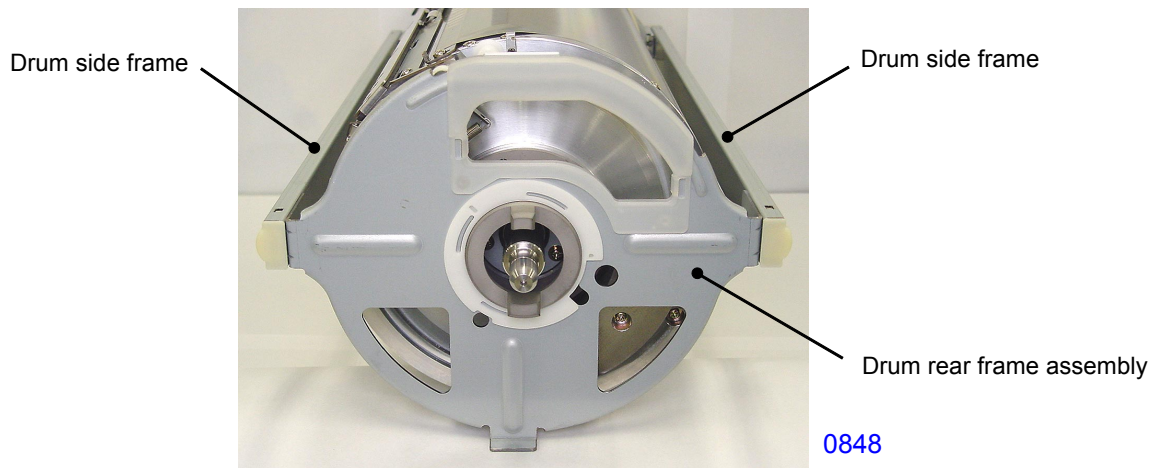
Print drum PCB

0847

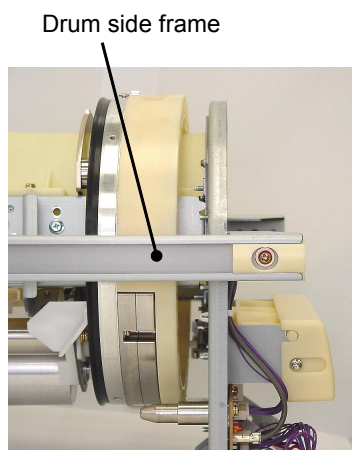
manuals4you.com

11. Removing the Drum Joint

- (1) Remove the print drum from the machine.
- (2) Detach both the left and right drum side frames by removing screws (M4x8: 2pcs each).
- (3) Gently pull out the drum rear frame assembly off the drum joint.
- (4) Remove screws (M4x8: 3pcs) and remove the drum joint.



< Rear >

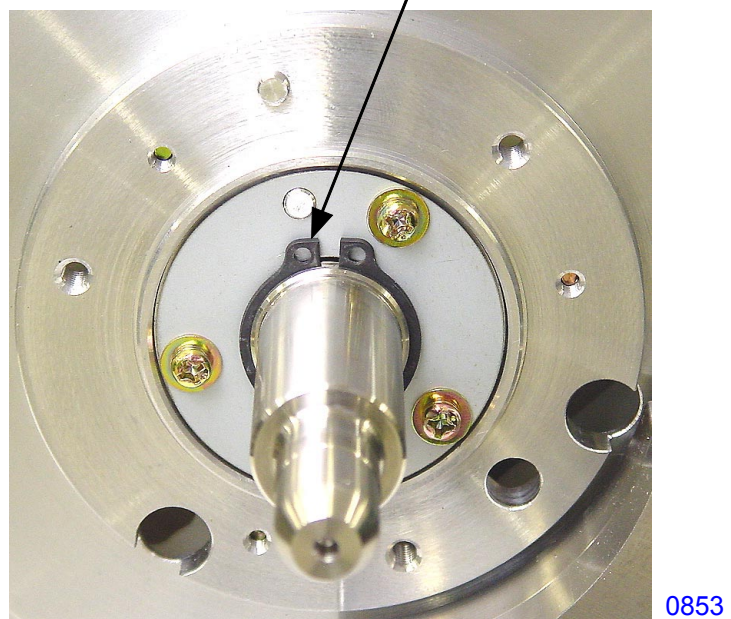
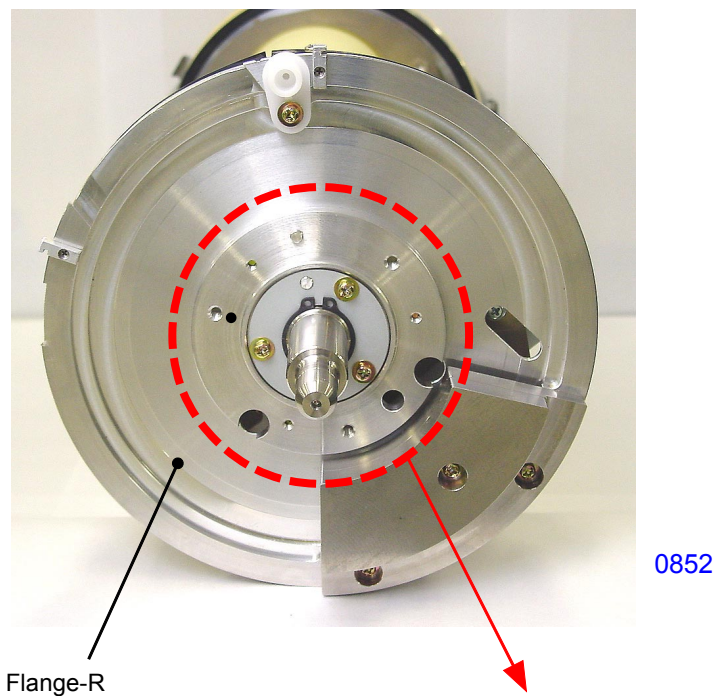


< Front >



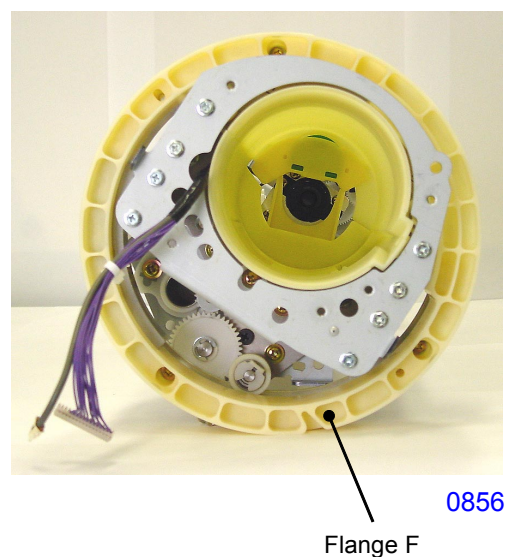
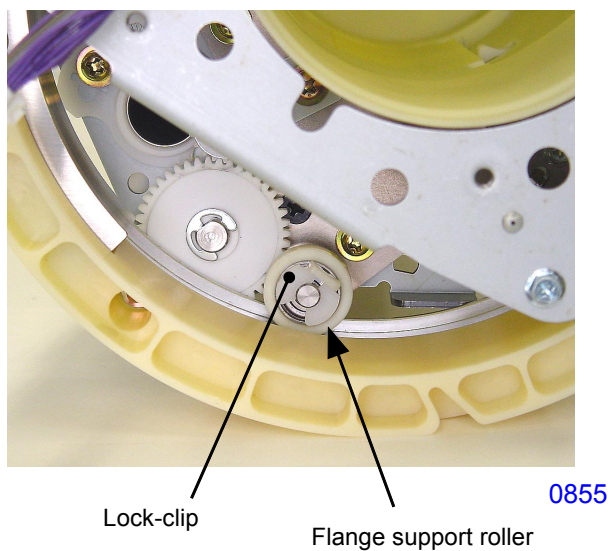
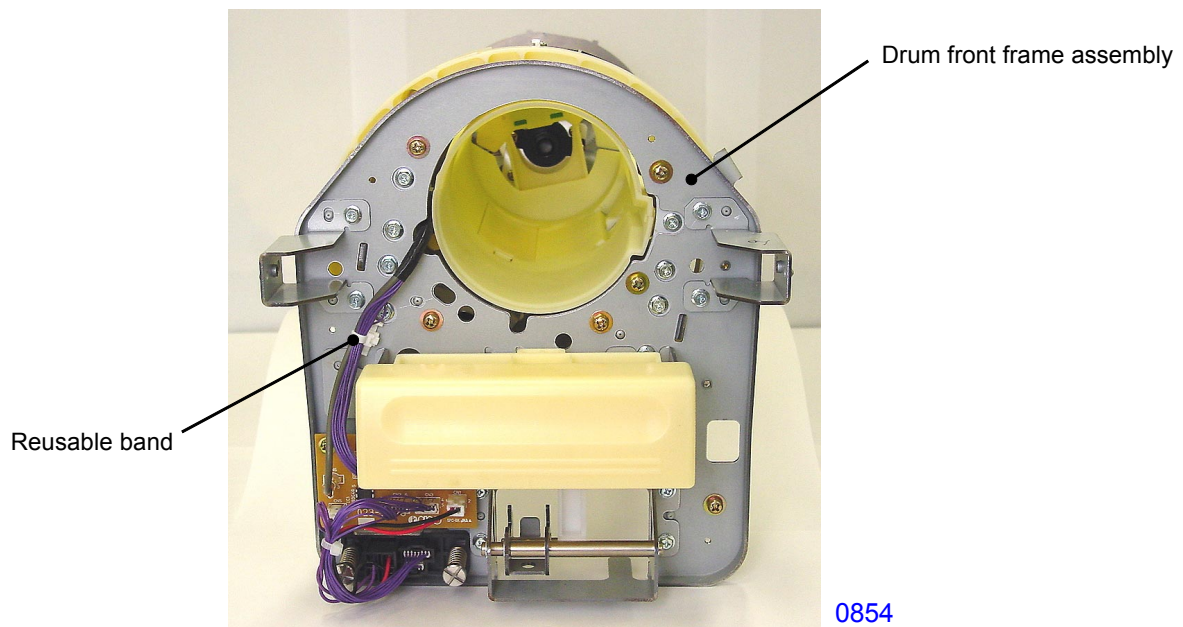
12. Removing the Flange-R

- (1) Make a confidential master on the print drum and pull out the drum from the machine.
- (2) Remove the following components.
 - Screen assembly
 - Master clamp base assembly
 - Drum body
 - Drum side frames (2pcs)
 - Drum rear frame assembly
 - Drum joint
- (3) Remove the C-ring and detach the flange-R.



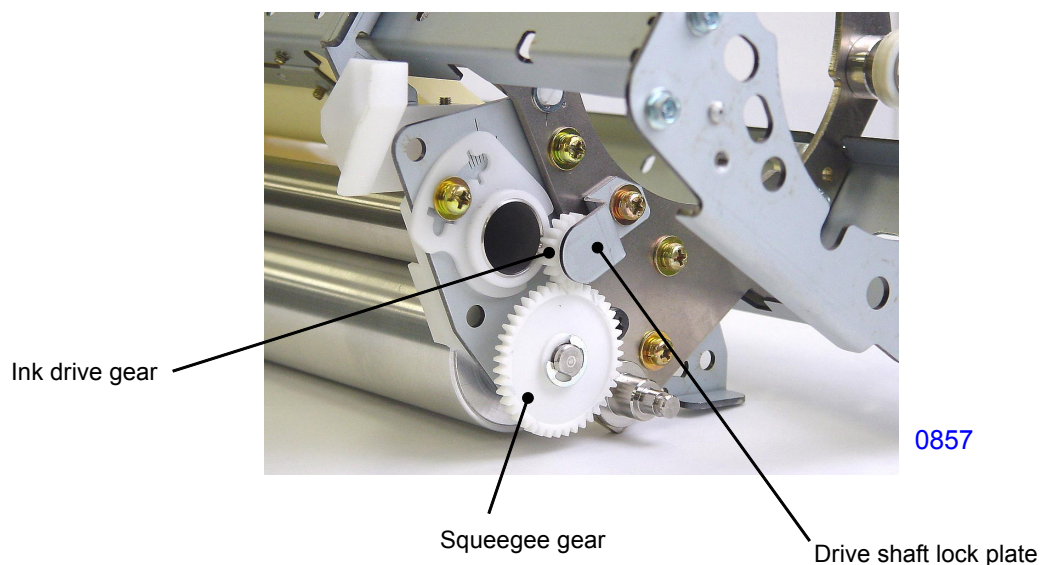
13. Removing the Flange-F

- (1) Make a confidential master on the print drum and pull out the drum from the machine.
 - (2) Remove the following components.
 - Screen assembly
 - Master clamp base assembly
 - Drum body
 - Drum side frames (2pcs)
 - (3) Disconnect two connectors from the print drum PCB, detach one reusable band from the drum front frame assembly and detach the drum front frame assembly by removing screws (M4x8: 5pcs).
 - (4) Remove the lock-clip on the flange support roller found at the bottom of the drum, and detach the roller.
 - (5) Detach the flange-F.
- * Remaining two flange support rollers can be removed after removing the flange-F.



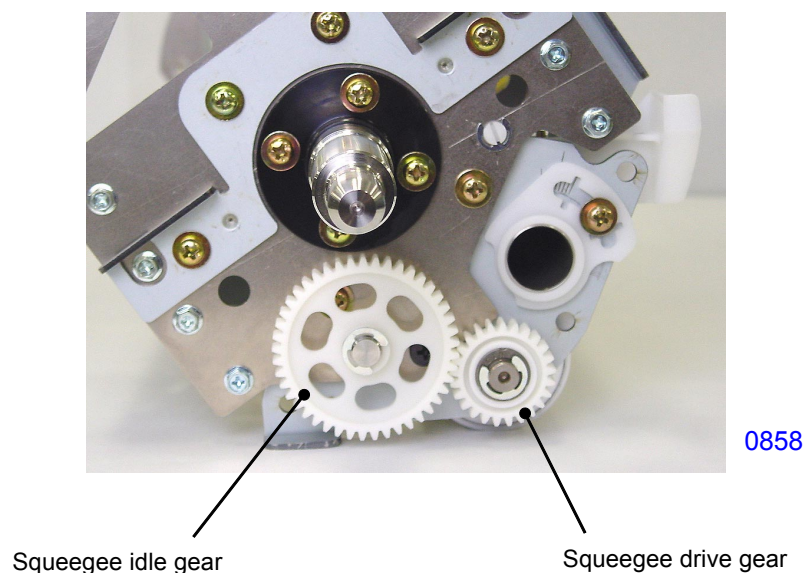
14. Removing the Squeegee Roller

- (1) Make a confidential master on the print drum and pull out the drum from the machine.
- (2) Remove the following components.
 - Screen assembly
 - Master clamp base assembly
 - Drum body
 - Drum cover
 - Drum side frames (2pcs)
 - Drum rear frame assembly
 - Drum joint
 - Flange-R
 - Drum front frame assembly
 - Flange-F
- (3) Detach the driven shaft support plate by removing a screw (M4x8: 1pc).
- (4) Remove the driven shaft gear.
- (5) Remove the squeegee gear by detaching an E-ring.



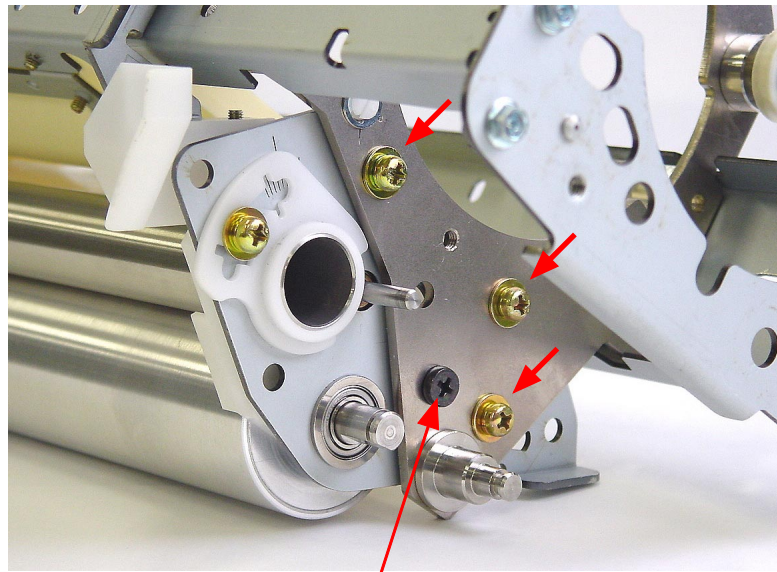
- (6) Remove the squeegee idle gear on the rear of the print drum by detaching an E-ring.
- (7) Also from the rear of the print drum, remove the squeegee drive gear by detaching an E-ring.

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- (8) Remove screws (M4x8: 3pcs) and also the shoulder screw from the front of the print drum.

< FRONT >



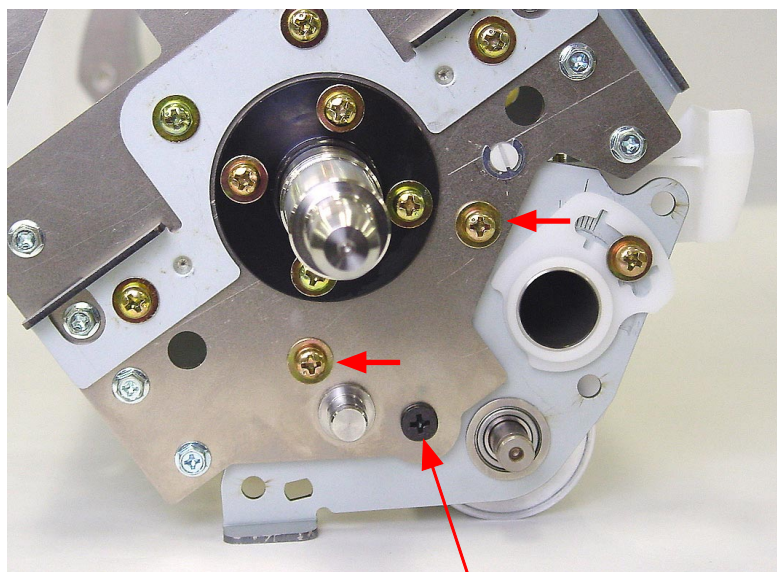
0859

Shoulder screw

- (9) Remove screws (M4x8: 2pcs) and also the shoulder screw from the rear of the print drum.

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< REAR >



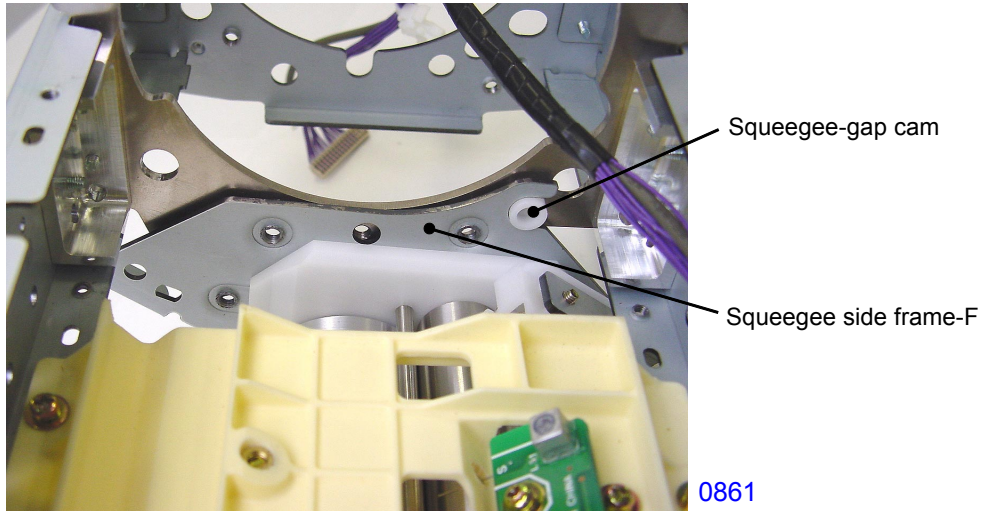
0860

Shoulder screw

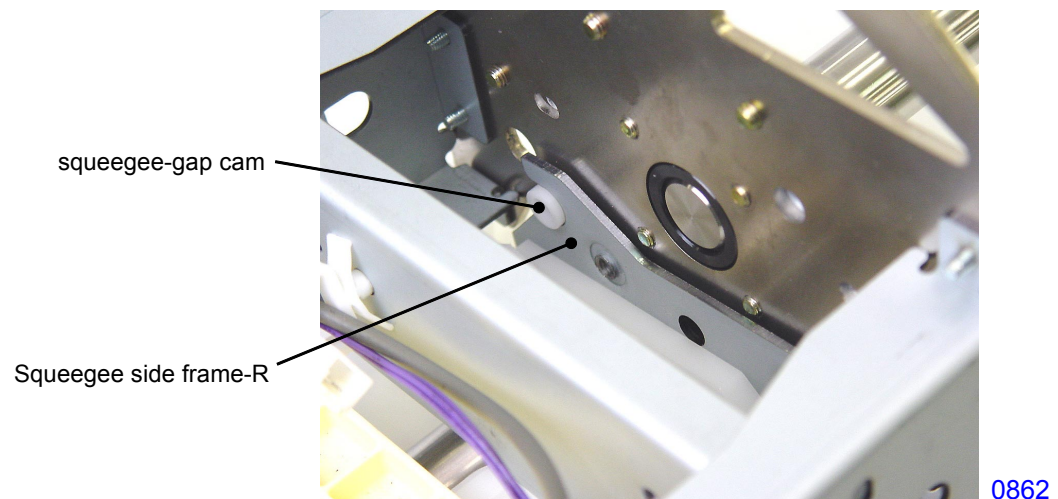
- (10) Detach the squeegee unit from the print drum by unhooking the hook portion on the squeegee unit from the plastic squeegee-gap cam in the front and rear of the print drum.

- continues on next page -

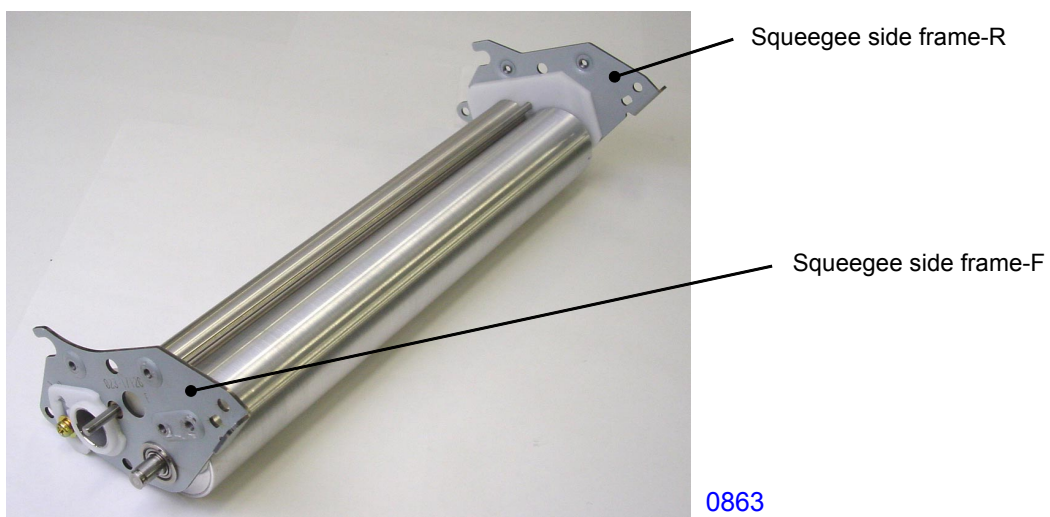
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< REAR >



< SQUEEGEE UNIT >

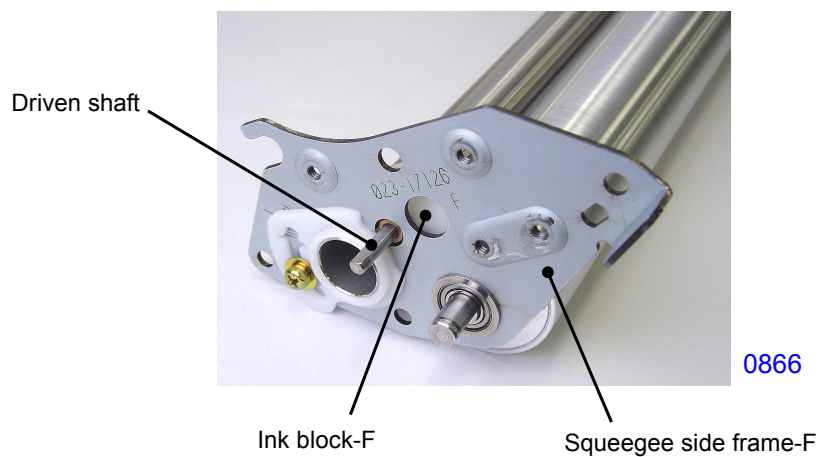
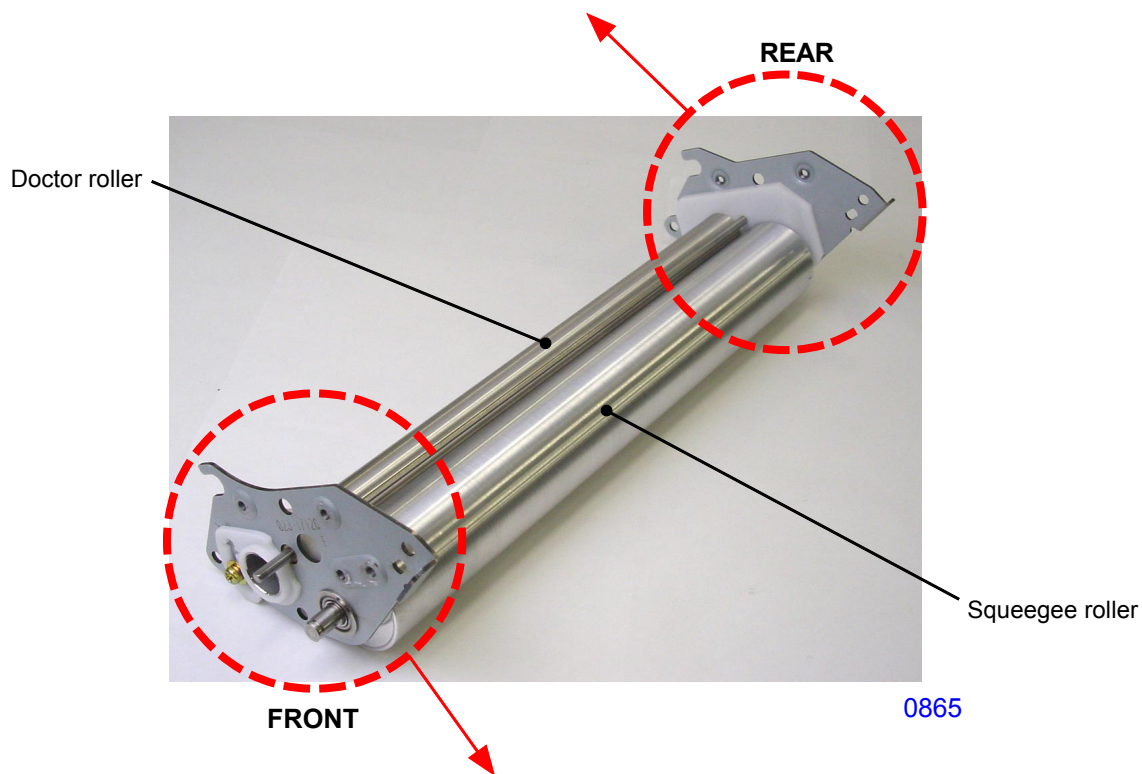
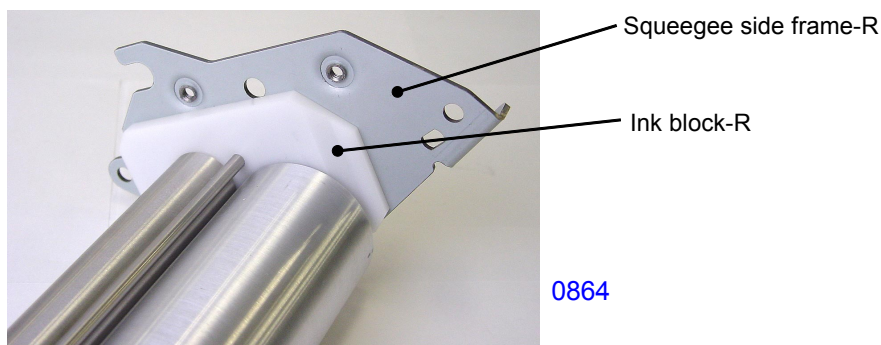


(11) Pull out the driven shaft from the squeegee unit.

* **Be careful not to lose the bearing metal and O-ring as these will come off together with the shaft.**

(12) Pull the squeegee side frames F & R off from the ends of the squeegee unit to free the squeegee roller.

* **The doctor roller, pressed tightly fit into the ink block F & R, will also come loose.**



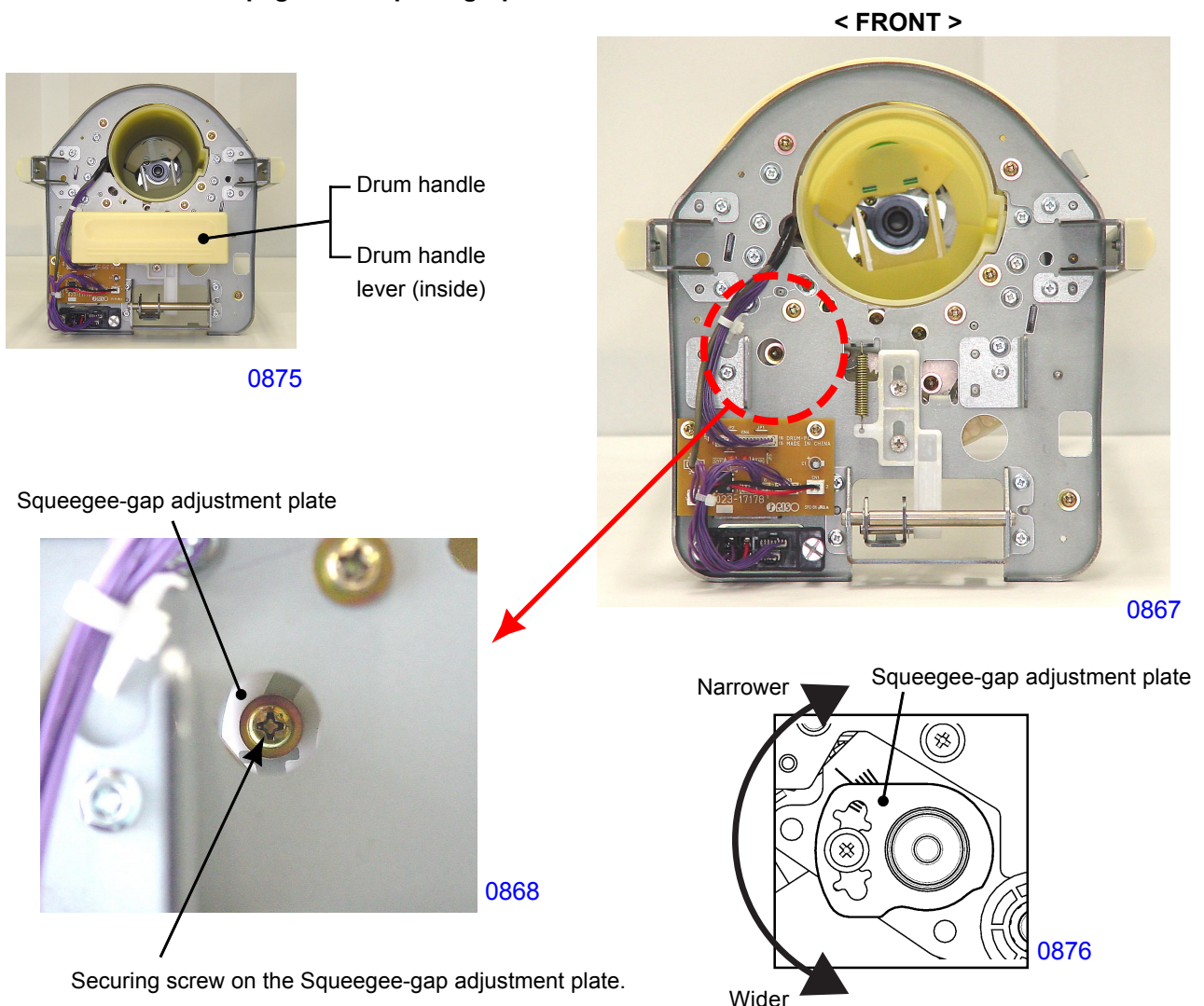
Adjustment

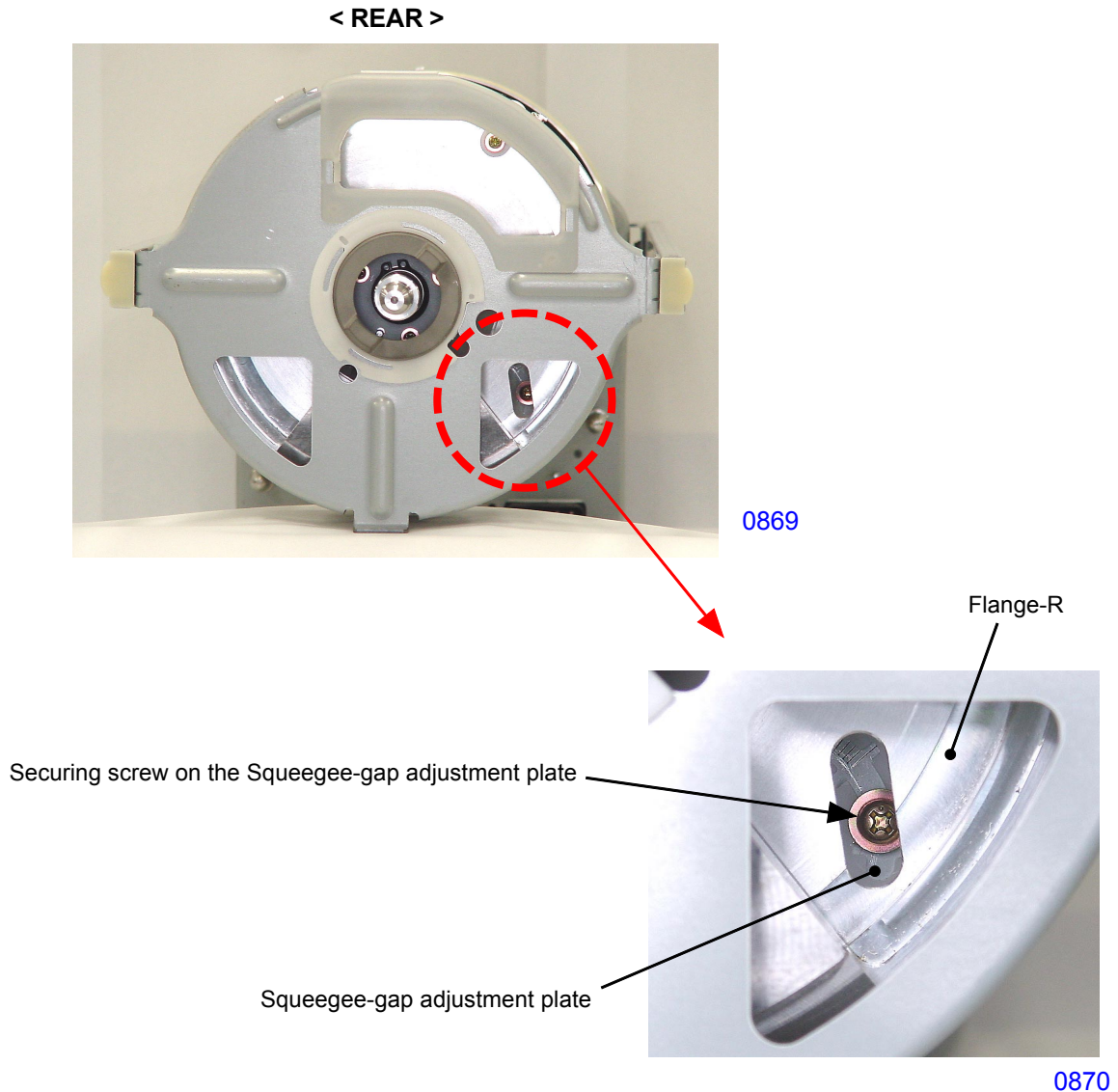
1. Squeegee Gap Adjustment

Checks and adjustment

- (1) Remove the print drum from the machine and detach following components off the print drum.
 - Screen assembly
 - Drum body
 - Drum cover
- (2) Detach the drum handle and drum handle lever. (Refer to the photograph below for the location).
- (3) Clean out the ink inside the squeegee unit.
- (4) Use a feeler gauge to check the gap between the squeegee roller and doctor roller.
 - * The gap should be 0.06mm plus/minus 0.02mm (0.04 to 0.08mm) for A3/Ledger drums.
 - * The gap should be 0.08mm plus/minus 0.02mm (0.06 to 0.10mm) for B4/Legal/A4/Letter drums.
- (5) If the gap is out of the specified range, loosen the securing screw on the squeegee-gap adjustment plate.
- (6) Insert a flat-head screw driver in the groove on the squeegee-gap adjustment plate and move the plate to adjust the squeegee gap.
- (7) Tighten the securing screw on the squeegee-gap adjustment plate to end the adjustment.

- Refer to the next page for the photograph of the rear side.





Symptoms:

- (1) If the squeegee gap is too wide, too much ink is transferred onto the inner surface of the print drum and may result in ink leakage from the print drum. Other problems, such as the master slipping out from the clamp plate and horizontal line images may start to rip on the master.
- (2) If the squeegee gap is too narrow, not enough ink is transferred onto the inner surface of the print drum and may cause the images on the prints to be too light or images missing from the prints due to lack of ink on the drum surface, and more than necessary quantity of prints may have to be printed before the image transfers completely on the paper.

2. Squeegee Pressure Balance Adjustment

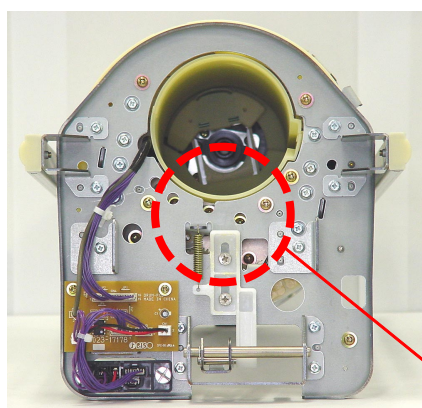
Checks and adjustment

- (1) Create a master using Test chart No.14 and make prints. Check the left and right of the prints to compare the print density and confirm that the density is even between the two sides.
- (2) Also check the squeegee pressure by pushing the drum body by fingers against the pressure roller. The gap between the drum body and the squeegee roller by the feel of the fingers should be equal throughout the length of the print drum. The gap should be within the following range, and if not, make an adjustment.
 - * 0.2mm plus/minus 0.05mm (0.15 to 0.25mm) for A3/Ledger drums.
 - * 0.3mm plus/minus 0.05mm (0.25 to 0.35mm) for B4/Legal/A4/Letter drums.

< Adjustment in the FRONT >

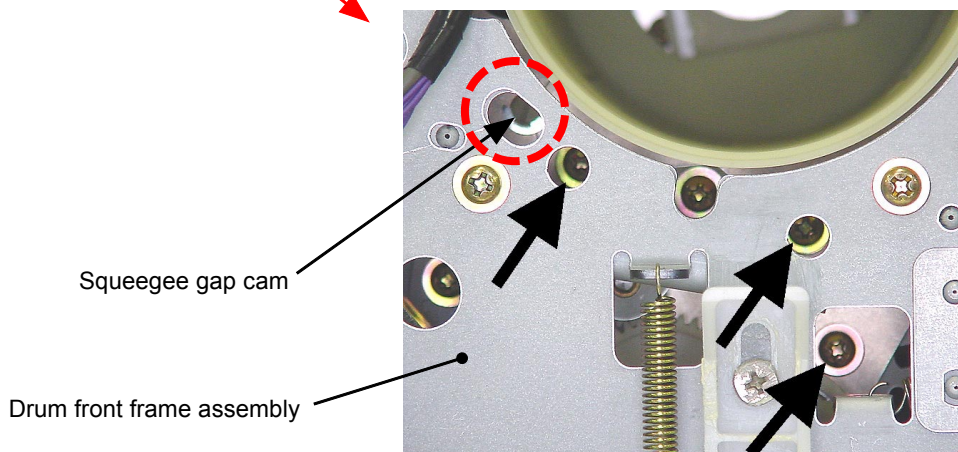
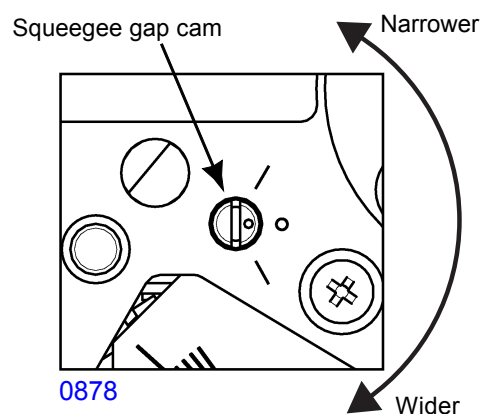
- (3) Remove the print drum from the machine, pull out the ink bottle and remove following components.
 - Drum cover
 - Drum handle
 - Drum handle lever
- (4) Loosen the three securing screws (indicated by the arrow marks on the photograph) on the squeegee side frame-F found through the holes on the drum front frame assembly.
- (5) Also from the hole on the drum front frame assembly, using a flat-head screwdriver, rotate the squeegee-gap cam until correct gap is obtained between the squeegee roller and drum body.
- (6) Tighten the three securing screws on the on the squeegee side frame-F to finish the adjustment on the front side of the print drum.

- the adjusting procedure for the rear side of the print drum continues on the next page -



< FRONT >

0871

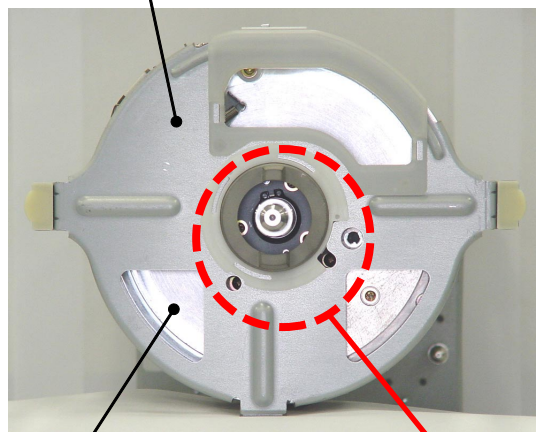


0872

< Adjustment in the REAR >

- (3) Remove the print drum from the machine.
- (4) Looking at the rear of the print drum, find two securing screws of the squeegee side frame-R (indicated by the arrow marks on the photograph) and loosen the two screws.
- (5) Insert a flat-head screwdriver through the opening on the drum rear frame assembly, rotate the squeegee-gap cam until correct gap is obtained between the squeegee roller and drum body.
- (6) Tighten the two securing screws on the on the squeegee side frame-R to finish the adjustment on the rear side of the print drum.

Drum rear frame assembly

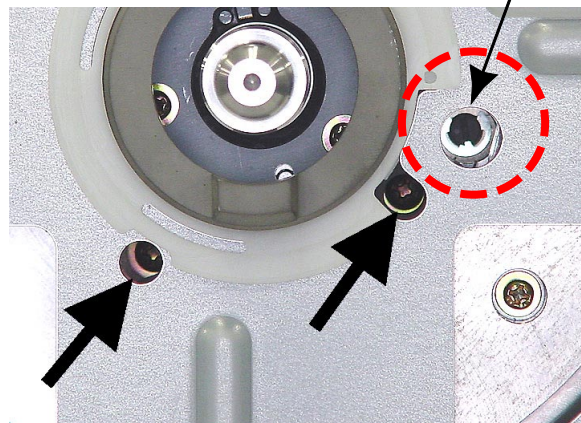


0873

< REAR >

Flange-R

Squeegee gap cam



0874

Symptoms

- (1) Difference in the squeegee pressure between the front and rear of the print drum will result in uneven density between the right and left of the prints.
- (2) If the squeegee pressure is too strong (the gap too small), too much ink is transferred onto the inner surface of the print drum and may result in ink leakage from the print drum. Other problems, such as the master slipping out from the clamp plate and horizontal line images may start to rip on the master.
- (3) If the squeegee pressure is too weak (the gap too large), not enough ink is transferred onto the inner surface of the print drum and may cause the images on the prints to be too light or images missing from the prints due to lack of ink on the drum surface, and more than necessary quantity of prints may have to be printed before the image transfers completely on the paper.

CHAPTER 9: CLAMP UNIT

Contents

MECHANISM

- 1. Clamp Unit Home Positioning Mechanism 9-2
- 2. Clamp Plate Opening Mechanism 9-3
- 3. Drum Position-A Compensation 9-4
- 4. Clamp Plate Master Clamp Mechanism 9-5

DISASSEMBLY

- 1. Removing the Clamp Unit..... 9-6
- 2. Removing the Clamp Motor 9-7
- 3. Removing the Clamp Sensors A & B 9-8

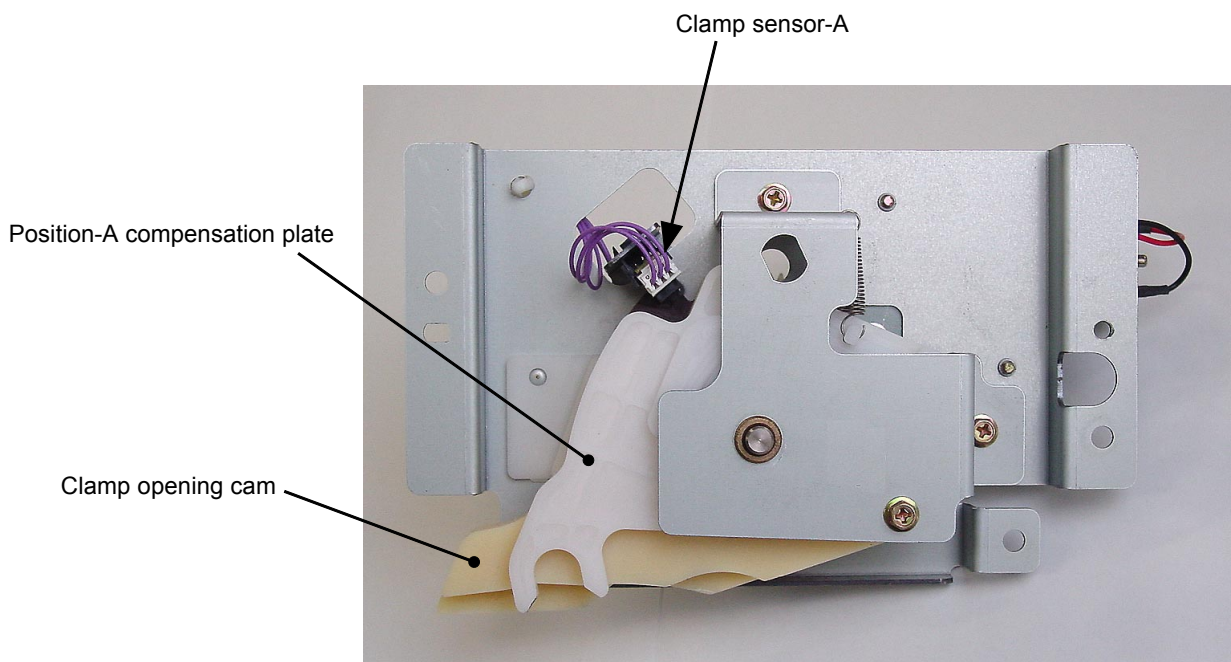
Mechanism

1. Clamp Unit Home Positioning Mechanism

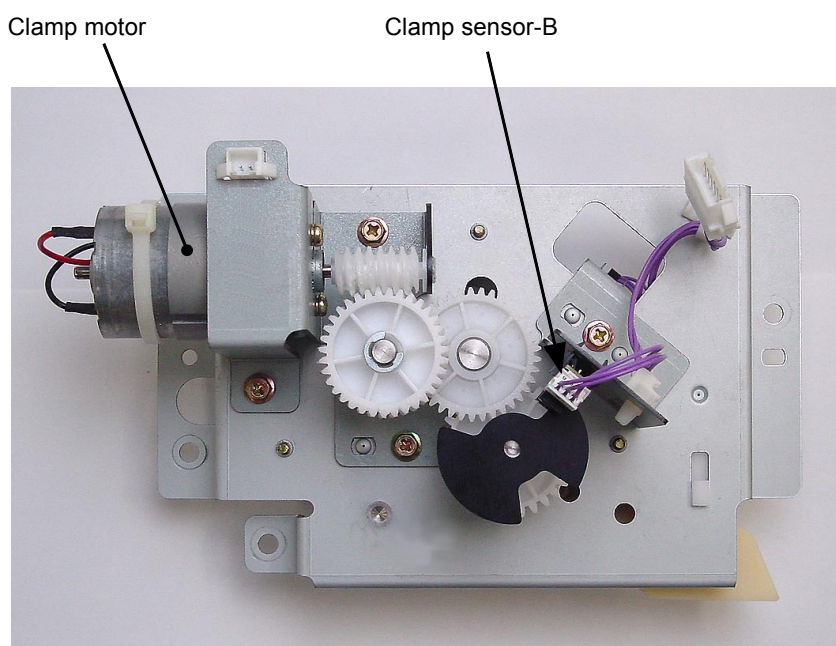
The clamp unit is checked if the unit is at home position or not each time the machine power is turned ON or the all-reset key is pressed.

The unit is judged to be at home position when the clamp sensor-A is detecting the clamp opening cam (the clamp opening cam is at the maximum up position) and the clamp sensor-B is not detecting the actuator disc.

If the unit is not at the home position when the power is turned ON or all-reset key is pressed, the clamp motor is activated to rotate the clamp cam is rotated to bring the position-A compensation plate and clamp opening cam to the home position.



0901

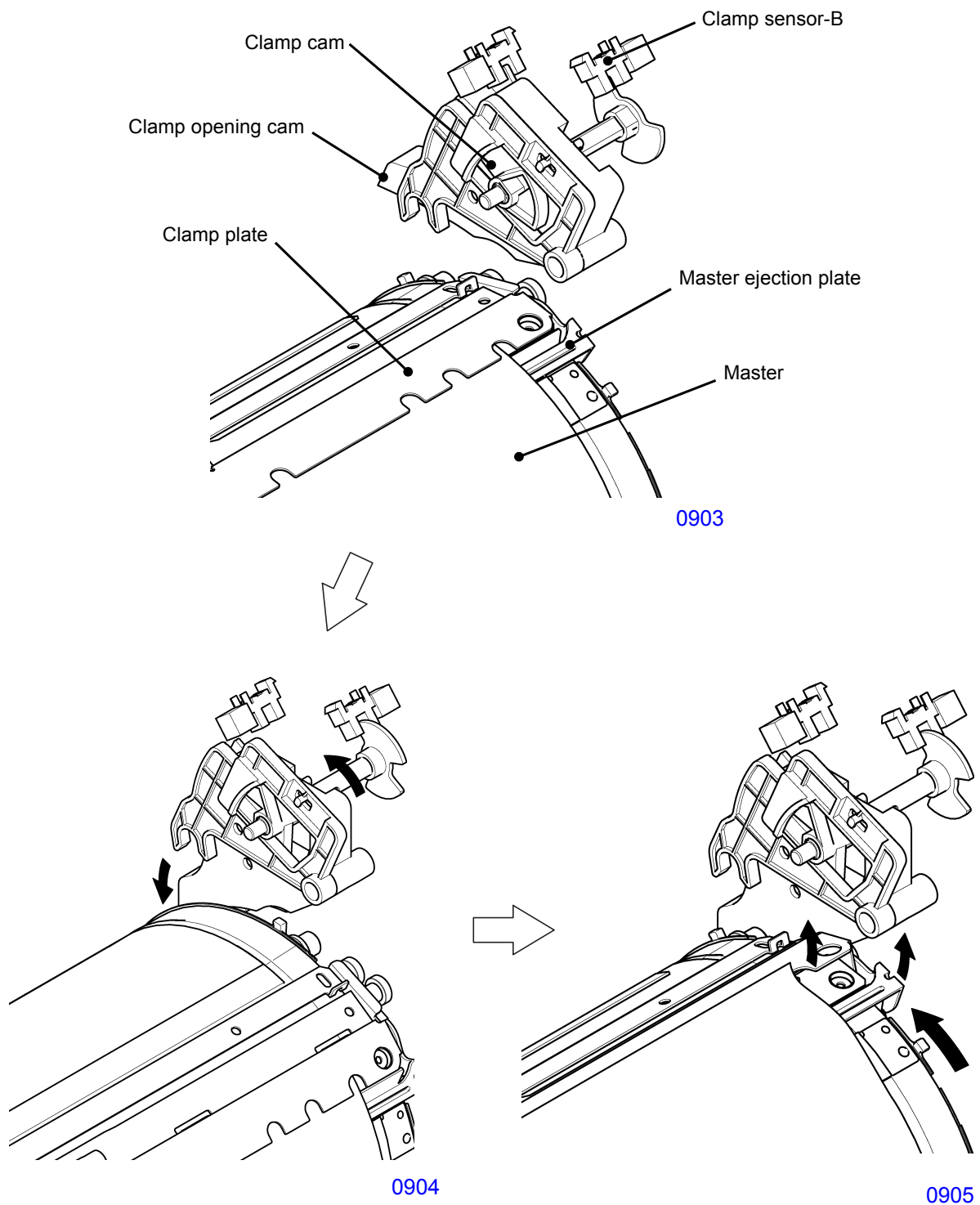


0902

2. Clamp Plate Opening Mechanism

When the START key is pressed for the master-making or confidential-master making, the print drum starts to rotate from its position-B. After the presence of the master on the print drum is checked and as the print drum returns to position-B, the print drum stops once and starts the clamp plate opening action. The clamp motor activates and rotates the clamp cam until the light path of the clamp sensor-B is blocked by the disc. This action brings the clamp opening cam down.

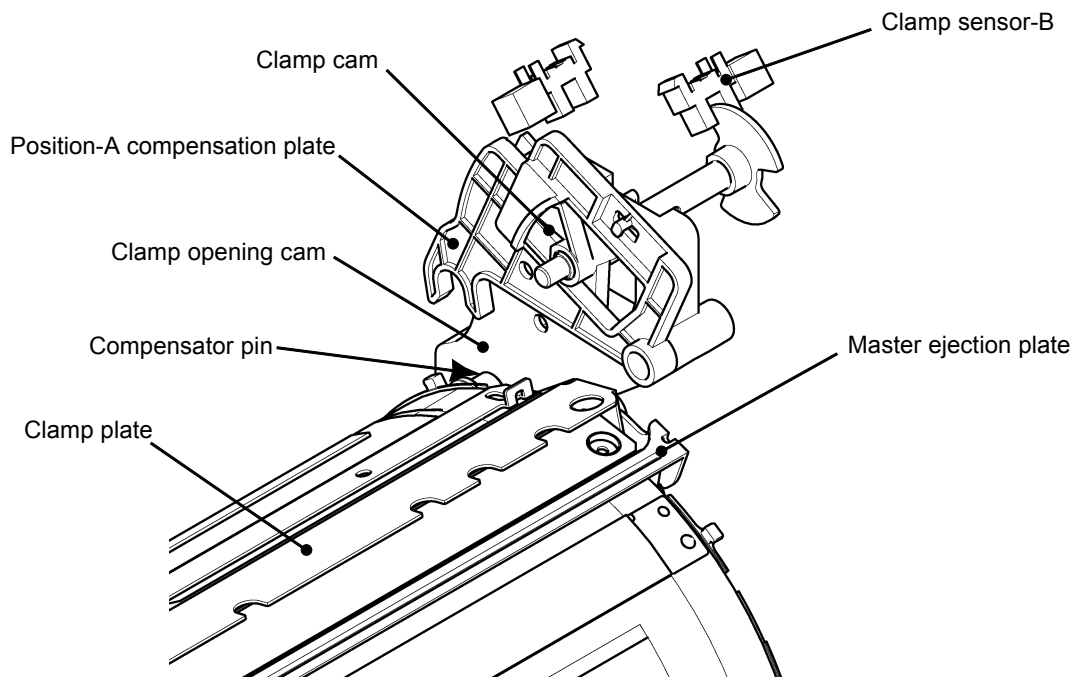
The print drum then rotates to start the master removal action. The clamp opening cam, at its lowered position, opens the clamp plate first, and then lifts the master ejection plate to eject the leading edge of the master out from under the clamp plate.



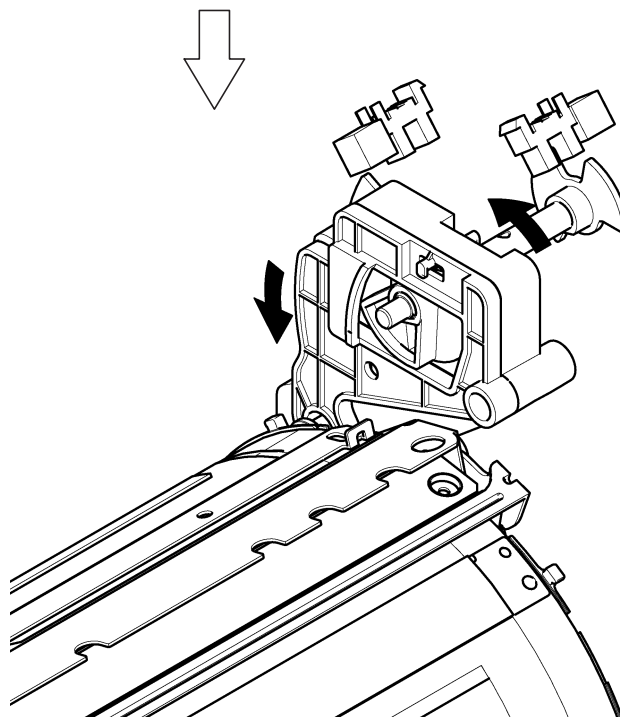
3. Drum Position-A Compensation

The print drum rotates to remove the master and as it comes back to position-A, the clamp opening cam at its lowered position opens the clamp plate and lifts up the ejection plate.

As the print drum stops at position-A, the clamp motor turns ON to rotate the clamp cam until the light path of the clamp sensor-B becomes unblocked by the disc. This action brings the position-A compensation plate down to catch the plastic compensator pin on the print drum to hold the print drum at position-A.



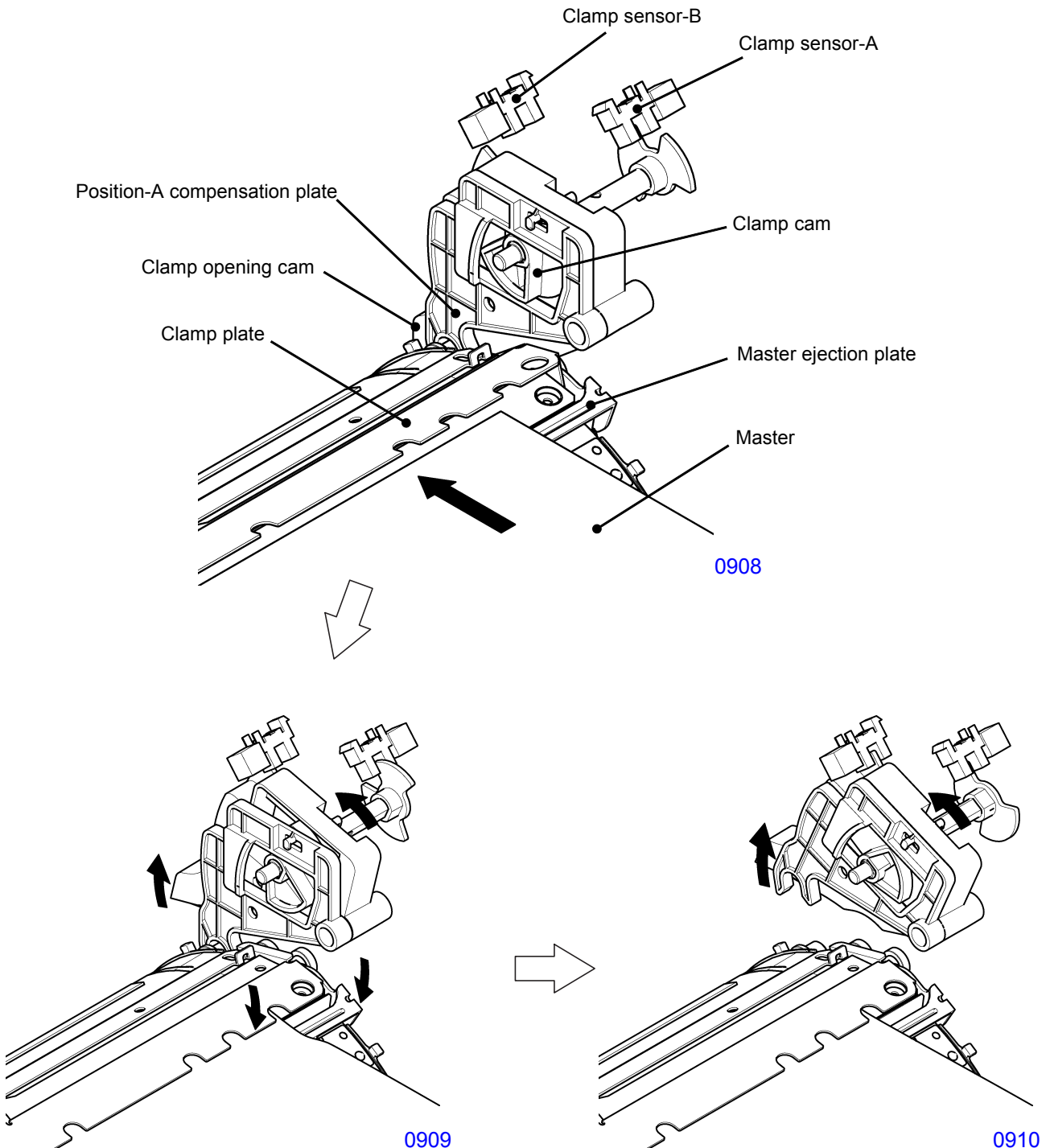
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4. Clamp Plate Master Clamp Mechanism

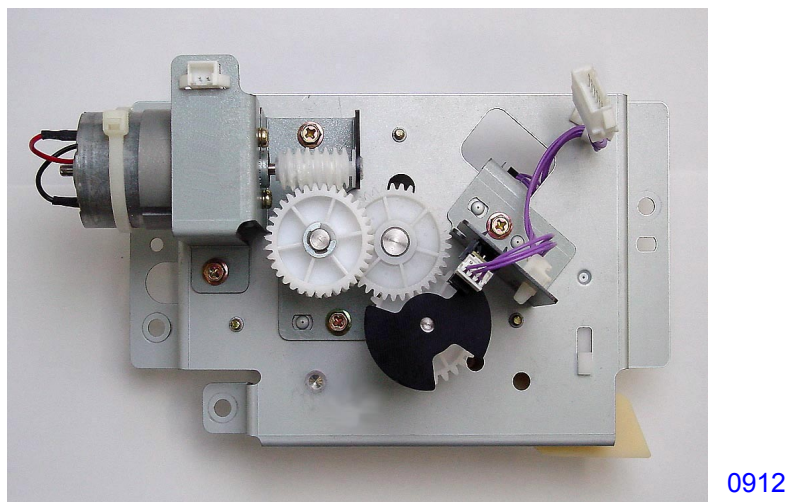
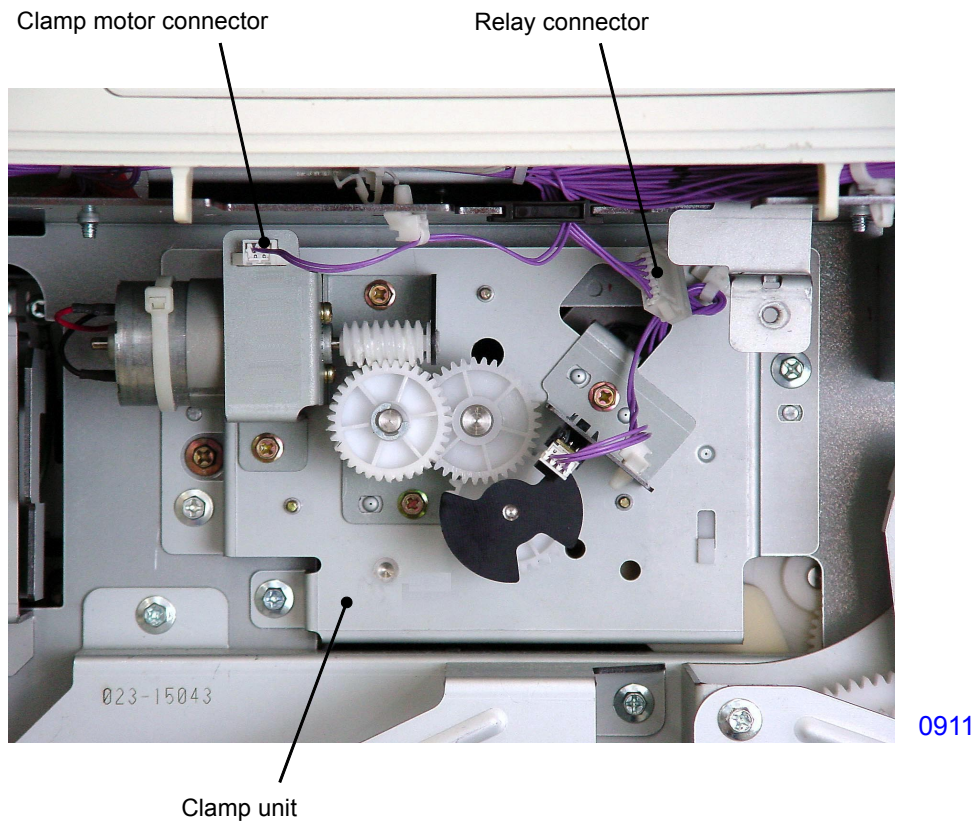
Once the load pulse motor on the master-making area feeds a set length of the master material onto the print drum, the clamp motor activates to rotate the clamp cam until the light path of the clamp sensor-A is blocked by the disc and the light path of the clamp sensor-B becomes unblocked. This action brings the clamp opening cam up and closes both the master ejection plate and the clamp plate to clamp the master material under the clamp plate. At this stage both the clamp opening cam and position-A compensation plate are brought up back to their home position.



Disassembly

1. Removing the Clamp Unit

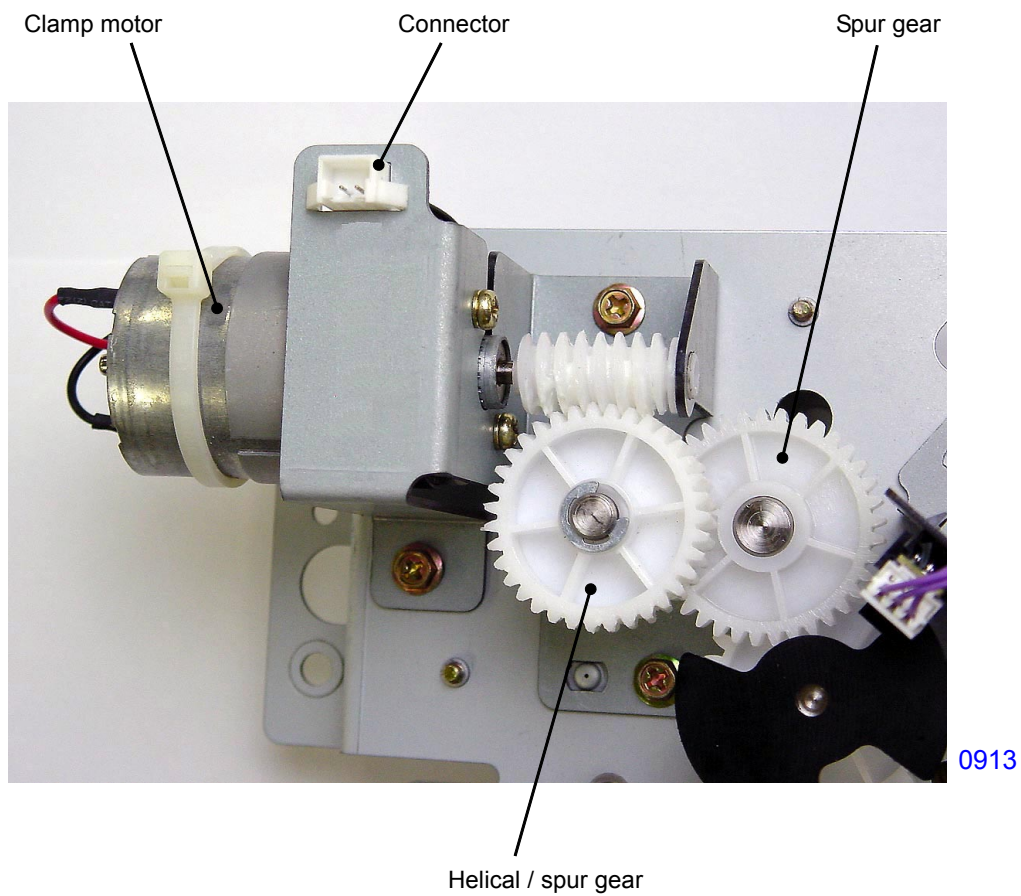
- (1) Switch off the machine power, remove the rear cover, and swing open the PCB bracket of the power supply PCB and mechanical control PCB.
- (2) Disconnect the clamp motor connector and relay connector. Remove screws (M4x8: 3pcs) and remove the clamp unit from the machine.



< Clamp Unit >

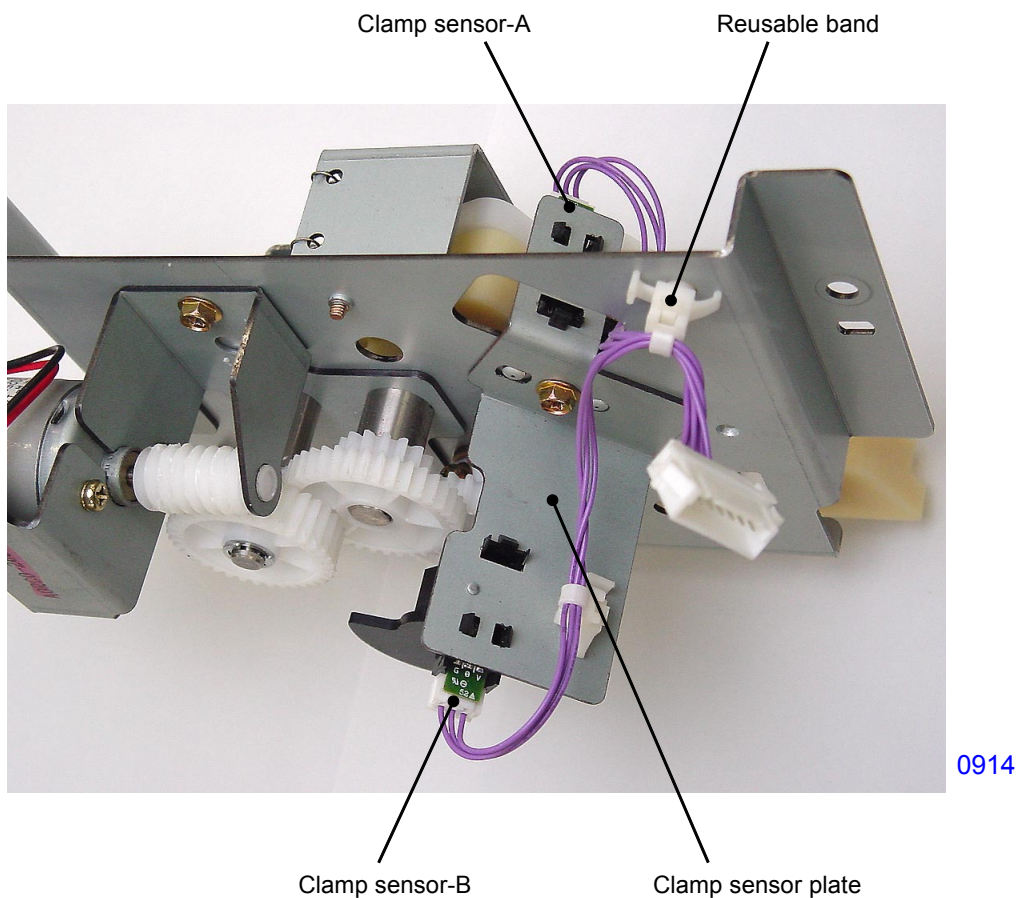
2. Removing the Clamp Motor

- (1) Switch off the machine power, remove the rear cover, and swing open the PCB bracket of the power supply PCB and mechanical control PCB.
- (2) Detach the clamp unit.
- (3) Detach the helical/spur gear and spur gear by removing an E-ring on the helical/spur gear.
- (4) Detach the clamp motor by unplugging the connector and removing the screws (M3x5: 2pcs).



3. Removing the Clamp Sensors A & B

- (1) Switch off the machine power, remove the rear cover, and swing open the PCB bracket of the power supply PCB and mechanical control PCB.
- (2) Detach the clamp unit.
- (3) Unplug the reusable band (1pc) from the clamp unit.
- (4) Remove a screw (M3x6: 1pc) and detach the clamp sensor plate with the two sensors attached.
- (5) Unplug the connectors and unhook and remove each sensor from the clamp sensor plate.



CHAPTER 10: MASTER REMOVAL SECTION

Contents

MECHANISM

1. Master Removal Mechanism	10-2
2. Master on the Drum Check Mechanism (Before Master Removal)	10-3
3. Removed Master Vertical Transport Mechanism	10-4
4. Disposed Master Compression Mechanism	10-5
5. Master Disposal Box Safety SW	10-6

DISASSEMBLY

1. Removing the Master Compression FG Sensor	10-7
2. Removing the Master Compression Motor	10-8
3. Removing the Master Removal Unit	10-9
4. Removing the Master Removal Sensor & Master Sensor	10-10
5. Removing the Master Removal Motor & Master Removal Motor FG sensor	10-11
6. Removing the Master Compression Plate HP Sensor	10-12
7. Removing the Master Disposal Box Safety SW	10-13
8. Removing the Master Removal Roller (Bottom)	10-14
9. Removing the Master Compression Plate	10-16
10. Removing the Pulley Shaft	10-17
11. Removing the Master Removal Roller (Upper)	10-18
12. Removing the Round Belts	10-19
13. Removing the Master Removal Housing Assembly	10-20

Mechanism

1. Master Removal Mechanism

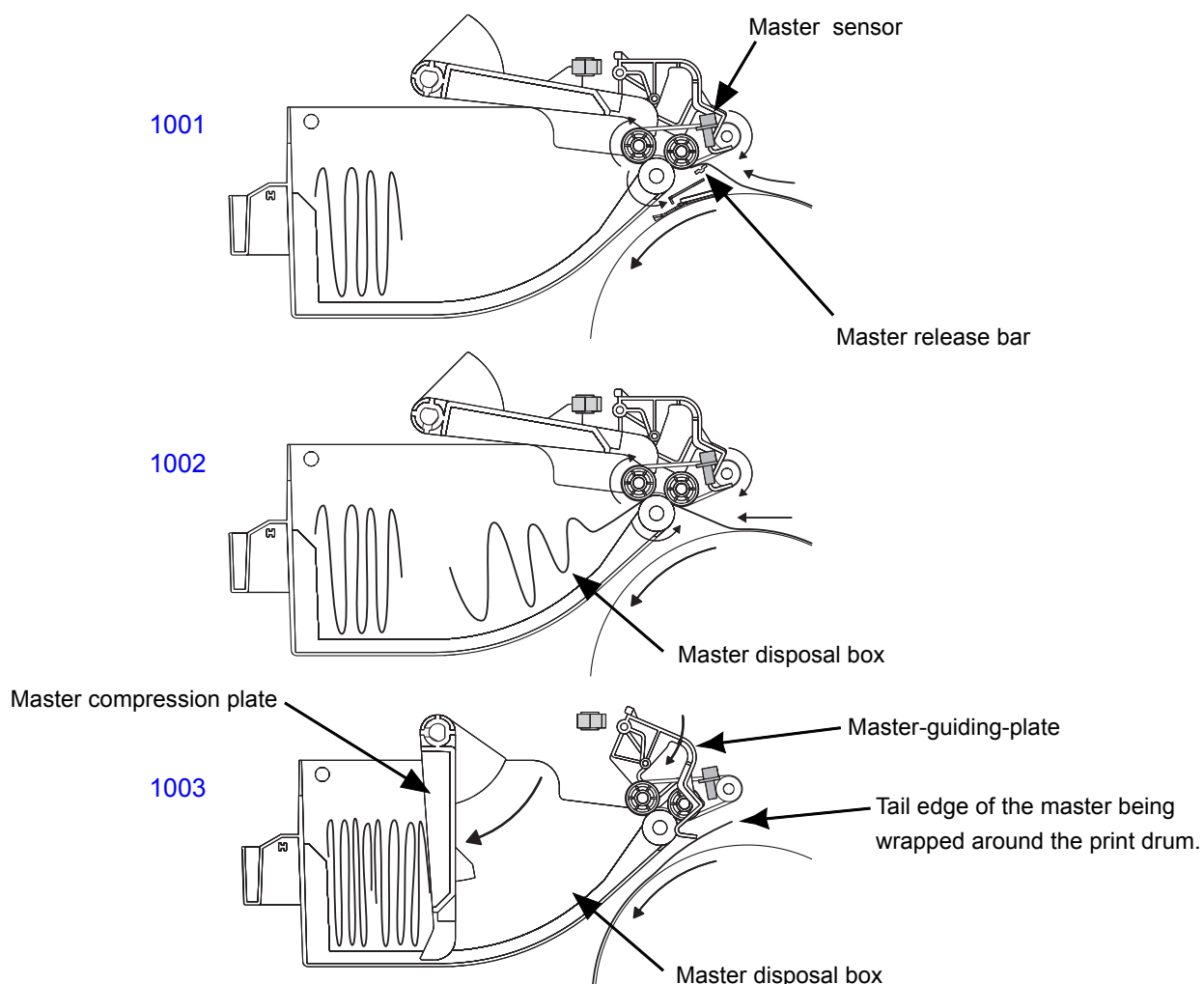
Master on the print drum is removed from the print drum and disposed in following sequence.

- (1) At the start of master removal, the master sensor checks for the presence of master on the print drum as the print drum makes one rotation.
- (2) After the print drum returns to Position-B, the clamp unit operates to bring the clamp opening cam down. The print drum rotates to position-A and both the clamp plate and the master release bar opens up to release the master out from the clamp plate of the print drum. The print drum does not stop at position-A, but continues its rotation.
- (3) The master removal roller rotates and catches the leading edge of the master and pulls the master away from the print drum as the print drum continues to rotate.
- (4) As the whole length of the removed master enters into the master disposal box, the master compressing plate pushes the removed master deep into the master disposal box.

* Above step-(1) is made only when the machine does not have the memory of the master on the drum.

* Even with no master is found on the drum, the master removal action takes place, except that the master removal sensor detection is not functional.

* Both the master compressing action and master loading action takes place at the same time, with the master-guiding-plate in its lowered position. The master-guiding -plate in this lowered position prevents the tail edge of the master being loaded on the print drum from touching the master removal rollers and getting the ink transferred.

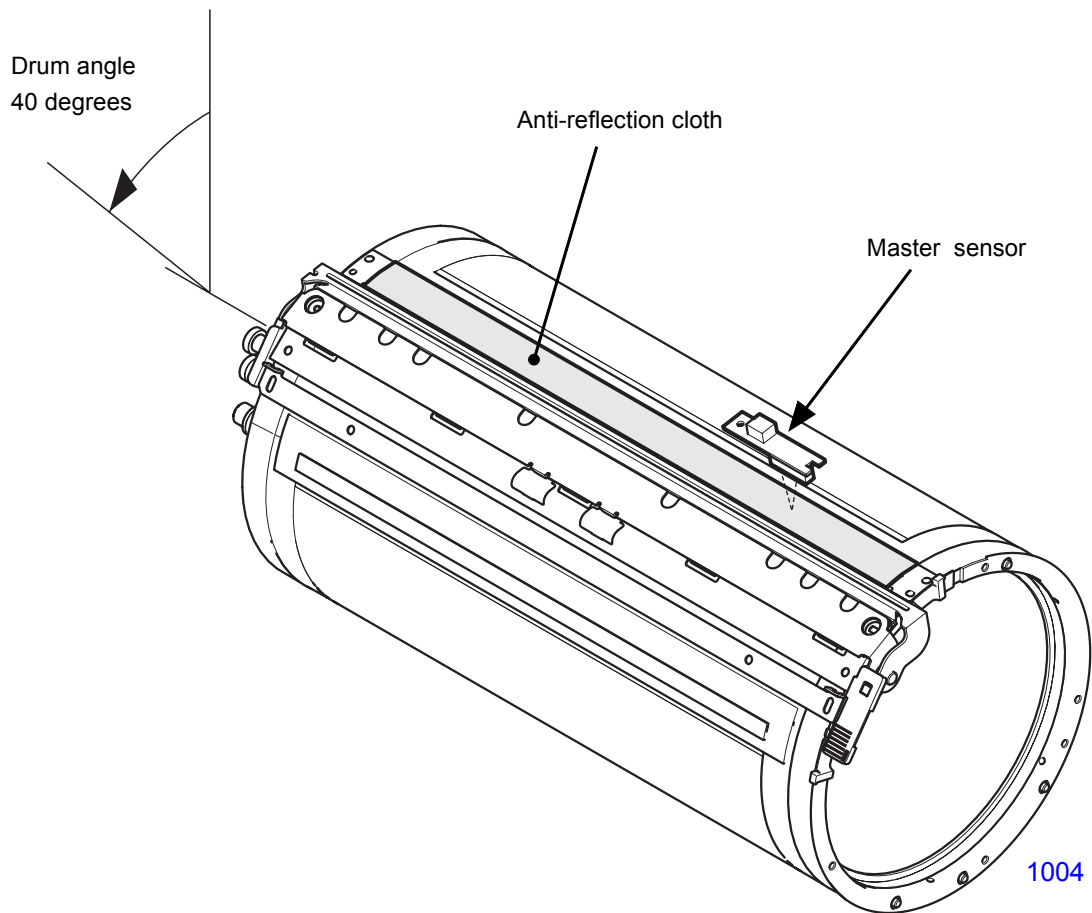


2. Master on the Drum Check Mechanism (Before Master Removal)

When creating a confidential or normal master, the print drum makes one rotation from its position-B. During this rotation, the Master sensor checks for the presence of the master on the drum at 40 degrees turn from position-A. If a master is found on the drum, the machine makes the master removal action with the master removal sensor active. If no master is found, the master removal action is made with the master removal sensor deactivated.

The default position of 40 degrees from position-A to check the presence of master on the drum can be changed by test mode No. 940.

If the machine already knows that there is a master on the drum before going into master making operation, the master on the drum check action is skipped, and the print drum starting the rotation from the position-B goes immediately into master removal action.



3. Removed Master Vertical Transport Mechanism

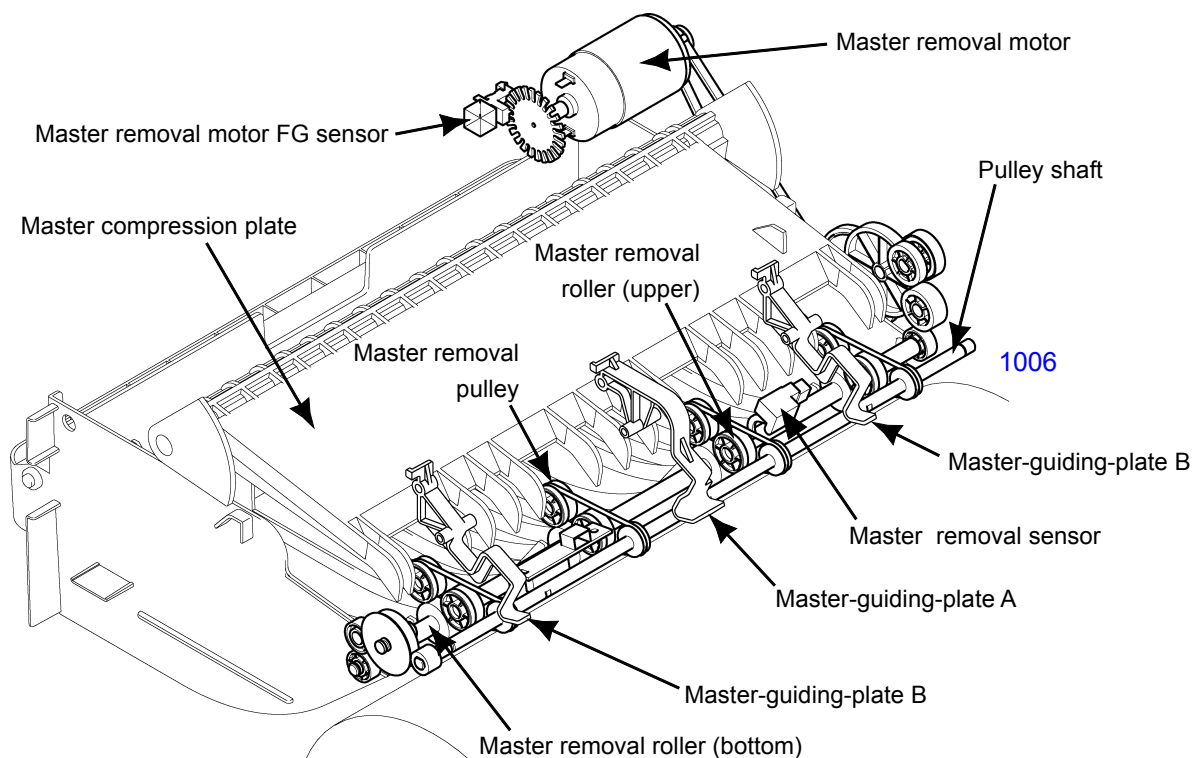
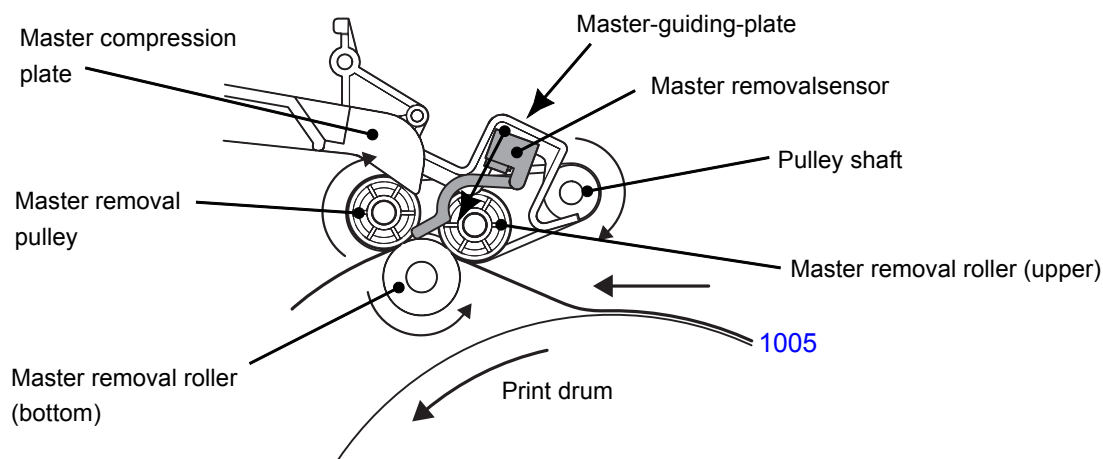
At the start of the clamp plate opening action to remove the master from the drum, the master removal motor activates to rotate the master removal rollers to catch the leading edge of the removed master from the drum. With the continued rotation of the print drum, the removed master is transferred into the master disposal box by the master removal rollers.

Once the master removal action has started and the print drum rotates to position-A, the main motor stops, and also the master removal motor deactivates 0.5 seconds later.

Whether the master has arrived into the master disposal area or not is checked by the master removal sensor at drum angles 120 degrees and 180 degrees during the master removal action.

The master removal roller speed is checked by the master removal motor FG sensor, and the speed can be adjusted by test mode No. 578.

After the master removal action ends, the master-guiding-plates A and B are raised by the master compression plate to clear the path for the oncoming master on the next master removal action.



4. Disposed Master Compression Mechanism

1) Initializing movement

The initialization action of the master compression plate is made in two occasions.

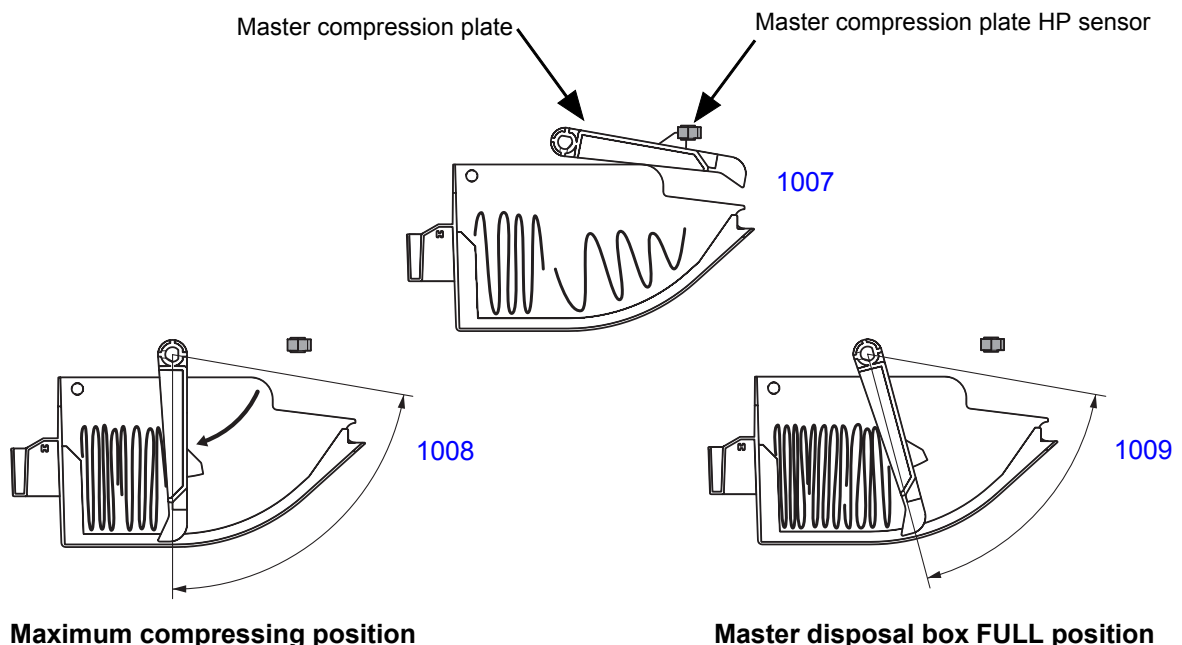
- (1) If the master compression plate HP sensor is found opened when the machine power is turned ON or when the all-reset key is pressed, the master compression motor rotates in the return direction until the light path of the master compression plate HP sensor becomes blocked. If the light path of the master compression plate HP sensor is blocked from the start, the initializing operation of the master compression plate is not performed.
- (2) If the light path of the master compression plate HP sensor is opened at the start of the master compressing operation, the master compression motor rotates in the return direction until the light path is blocked. If the light path of the sensor is blocked from the start, the initializing operation of the master compression plate is not performed.

2) Master compressing movement

With only a small amount of removed master in the master disposal box, the master compression plate makes full compressing action. The plate stops at the maximum down position for 3 seconds and then returns to the fully raised home position. The maximum down position is 130 pulse count by the FG sensor (adjustable by test mode No.573). The FG sensor, located in between the series of gears between the master compression motor and compression plate, starts counting the pulses when the compression plate clears from the master compression plate HP sensor.

As the removed master in the master disposal box increases, the resistance to the compression plate increases, causing the plate to slow down during the compression movement. The compression plate ends the compressing action before it reaches the 130 pulse count position. If the time intervals between each pulse exceeds 53 ms (adjustable by test mode No.575), the compression plate ends the compression action and stops for 3 seconds. The plate then returns to the home position.

As the amount of the removed master increases, the resistance against the compression plate increases during the compressing movement. If the time interval exceeds more than 53 ms (adjustable by test mode No.575) between each FG count within the compression plate arrives at 106 pulse count from the home position (adjustable by test mode No.576), the master disposal box is detected to be full. The LED lamp on the operation panel lights to give the FULL message.

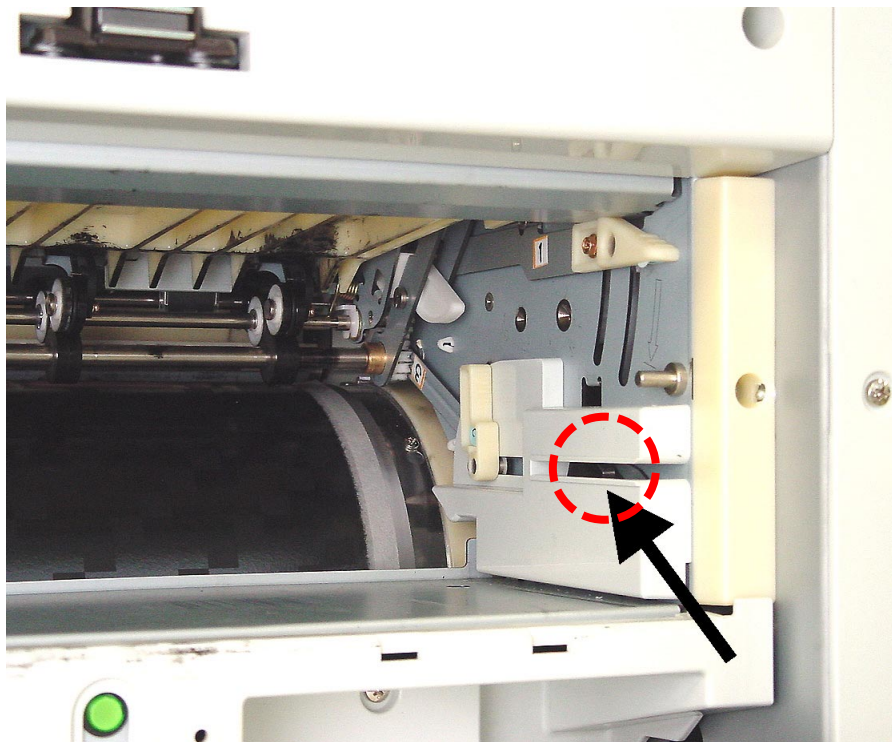


5. Master Disposal Box Safety SW

The master disposal box safety switch checks whether the master disposal box is correctly set on the machine.

When the master disposal box is not set on the machine, the master disposal safety switch prevents the main motor, clamp motor, master removal vertical transport motor and master compression motor from turning ON.

In the case the master disposal box FULL indication LED lights up on the operation panel, the master disposal box needs to be removed from the machine to switch OFF the master disposal box safety switch for 5 seconds to reset and clear the LED indication.



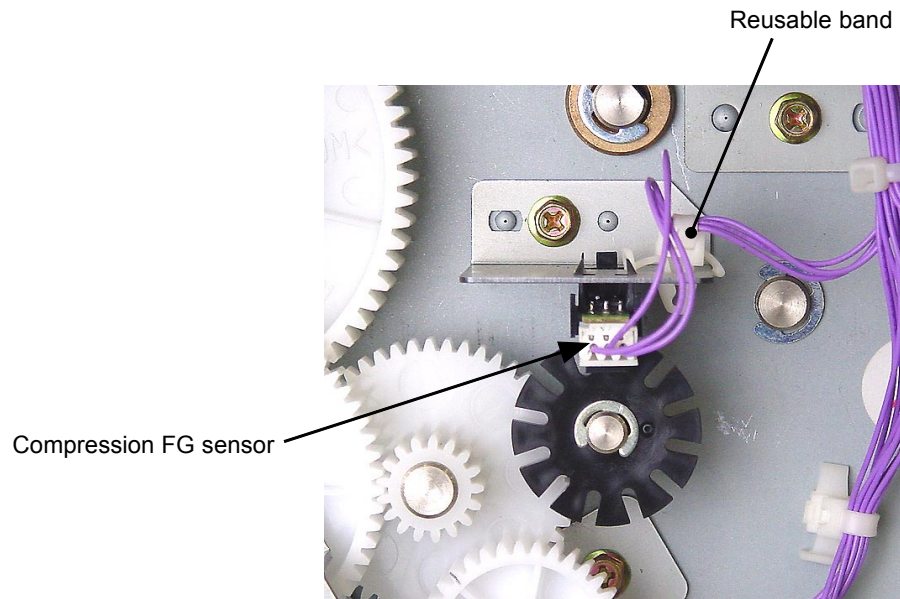
1010

Master disposal box safety SW

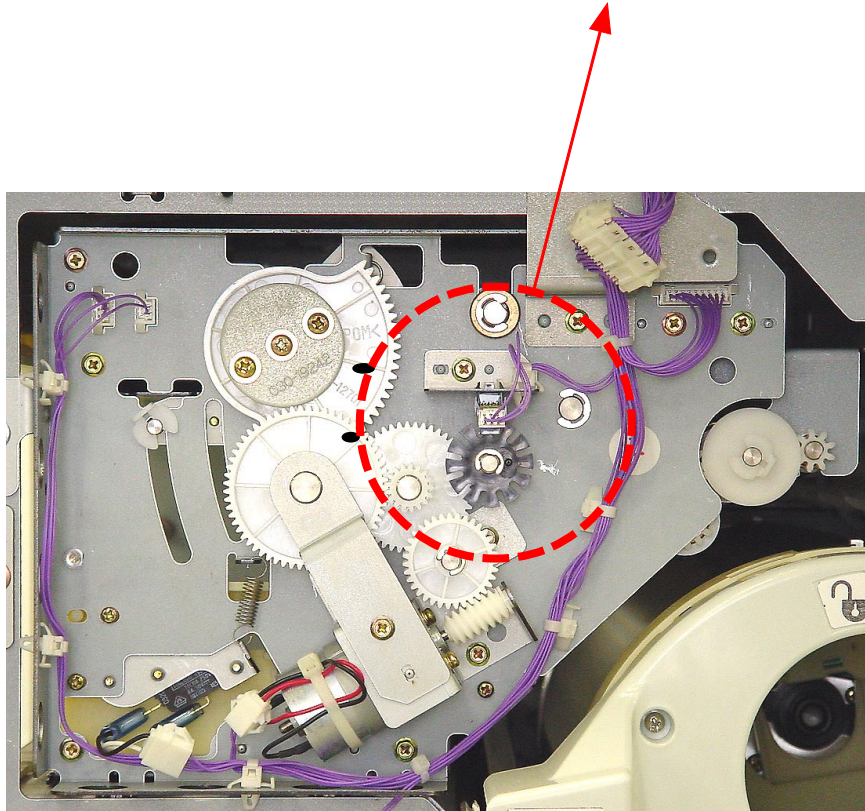
Disassembly

1. Removing the Master Compression FG Sensor

- (1) Switch off the machine power and remove the front cover.
- (2) Disconnect the connector to the sensor and unplug the reusable band from the sensor bracket.
- (3) Remove a screw (M3x6: 1pc) and detach the master compression FG sensor together with the bracket.



1011

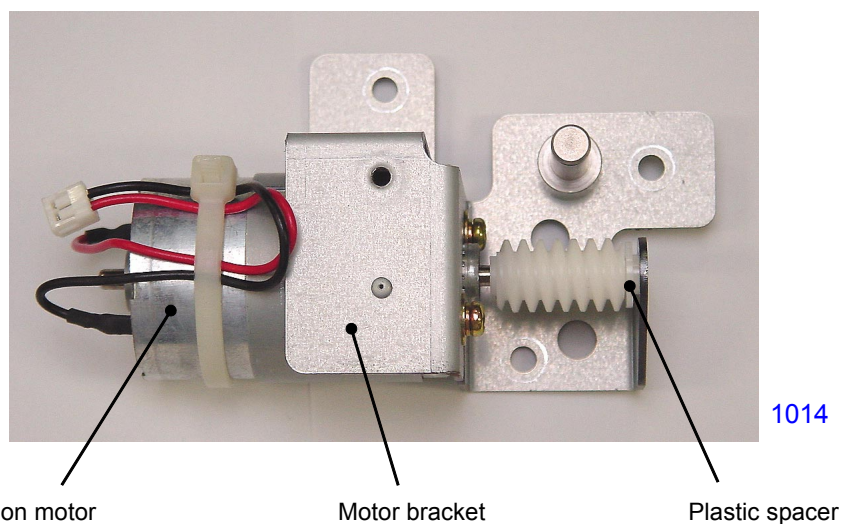
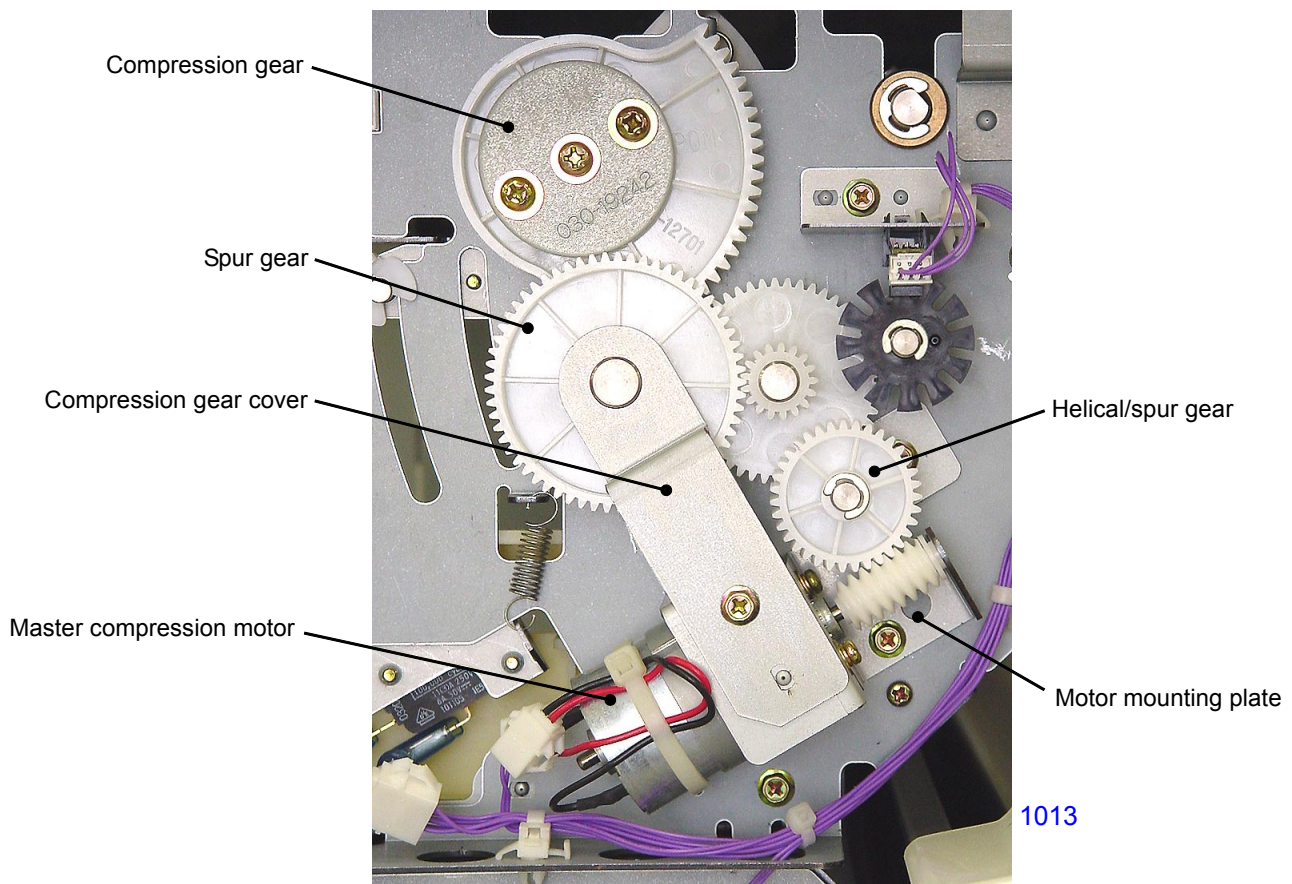


1012

2. Removing the Master Compression Motor

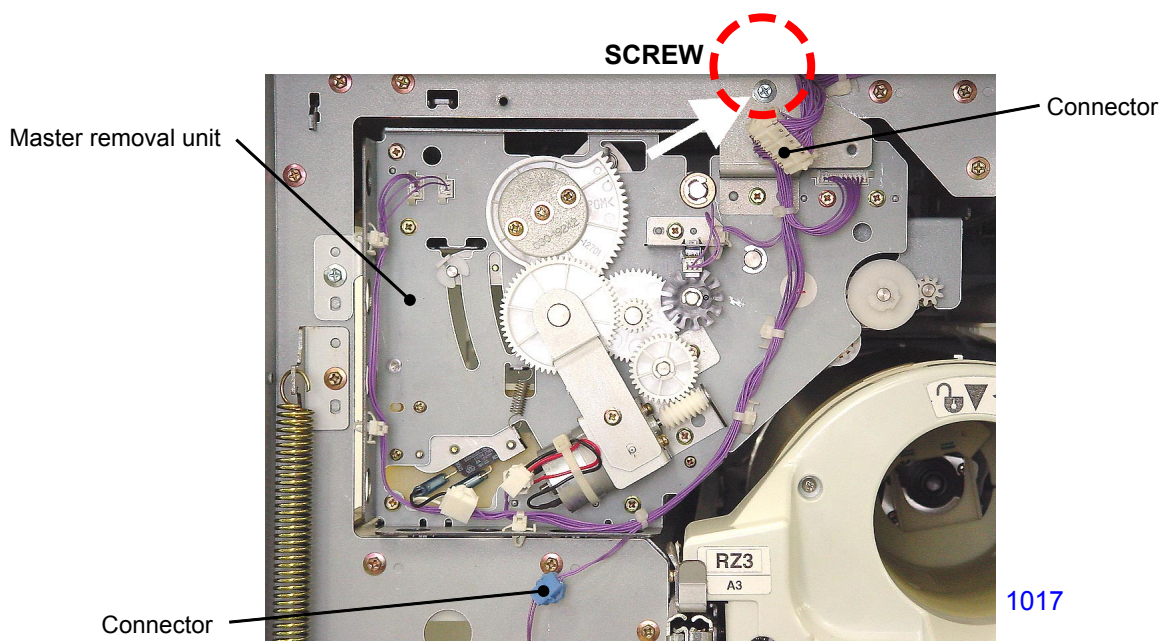
- (1) Switch off the machine power and remove the front cover.
- (2) Remove a screw (M3x6: 1pc) and detach the compression gear cover.
- (3) As the master compression plate swings down by its weight, remove the spur gear while holding the compression gear by hand and let the plate swing down slowly.
- (4) Detach the helical/spur gear by removing an E-ring.
- (5) Remove screws (M3x6: 3pcs) and detach the master compression motor, together with the motor bracket.
- (6) Detach the motor from the bracket by removing screws (M3x5: 2pcs).

* Be careful not to lose the white thin plastic spacer on the tip of the worm-gear on the motor shaft.



3. Removing the Master Removal Unit

- (1) Switch off the machine power, remove the master disposal box and detach the front cover.
- (2) Remove the master removal covers F & R by removing screw (M3x8: 1pc each).
- (3) Remove the screws (M4x8: 1pc each) found after removing the master removal covers F & R.
- (4) On the operators side of the machine (front), disconnect the two connectors and remove one screw (M4x8: 1pc) located on the top right, and slide the master removal unit out toward the operators side of the machine.



4. Removing the Master Removal Sensor & Master Sensor

- (1) Switch off the machine power and detach the master removal unit from the machine.

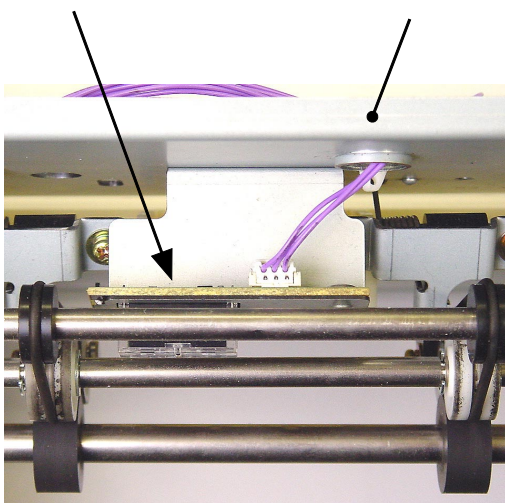
Removing the master sensor

- (2) Disconnect the sensor connector, remove a screw (M3x6: 1pc), and detach the master sensor together with the sensor bracket.

Removing the master sensor

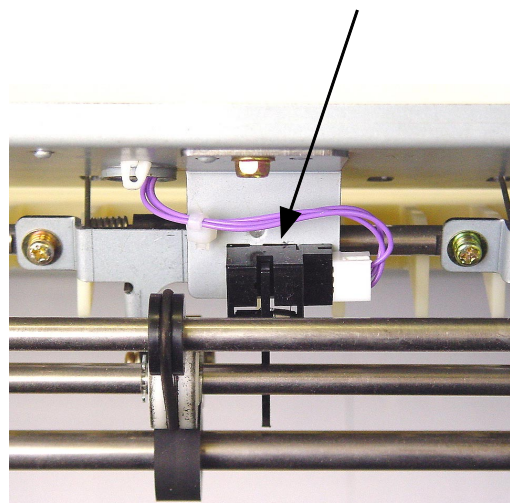
- (2) Disconnect the sensor connector, remove a screw (M3x6: 1pc) by inserting a screwdriver through a hole on the master disposal housing, and detach the master sensor.

Master sensor Master disposal housing



1018

Master removal sensor



1019



1020

< Master Removal Unit >

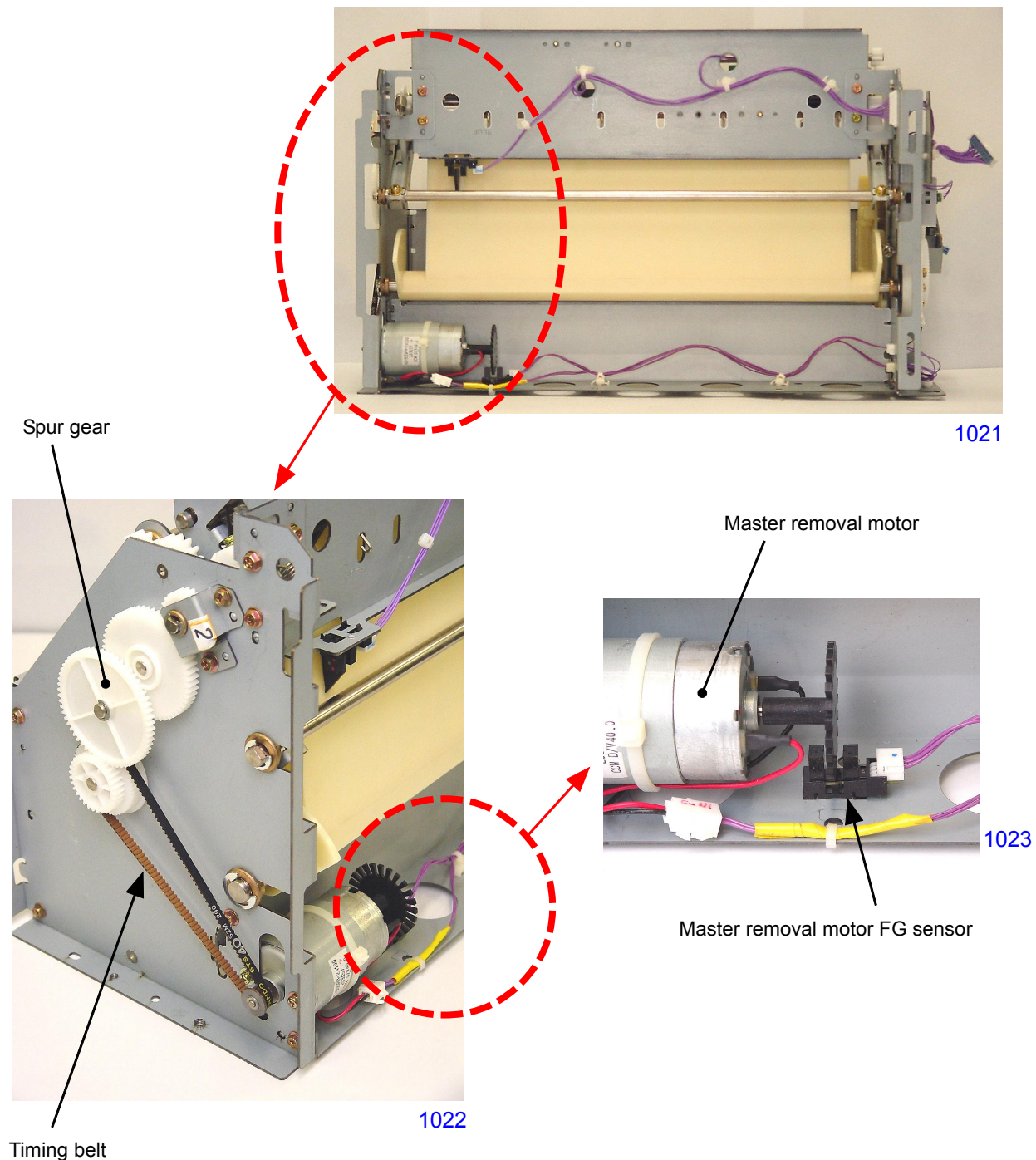
5. Removing the Master Removal Motor & Master Removal Motor FG sensor

Removing the master removal motor

- (1) Switch off the machine power and detach the master removal unit.
- (2) Remove an E-ring and detach the spur gear.
- (3) Remove the timing belt.
- (4) Disconnect the motor connector, remove screws (M3x5: 2pcs), and detach the master removal motor.

Removing the master removal motor FG sensor

- (5) Disconnect the sensor connector and detach the master removal motor FG sensor.

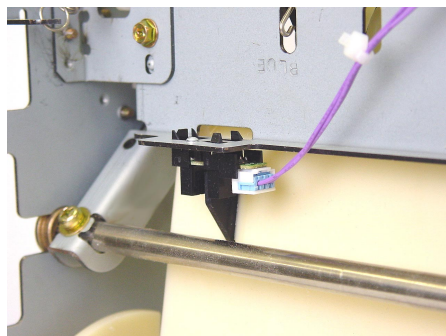


6. Removing the Master Compression Plate HP Sensor

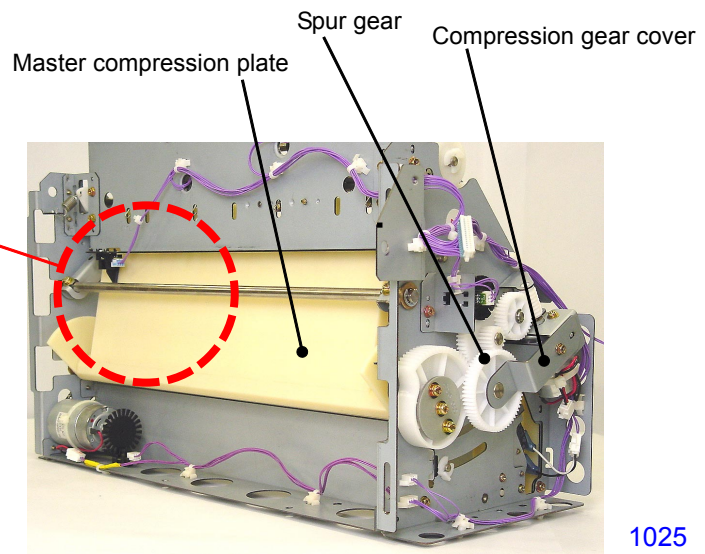
- (1) Switch off the machine power and detach the master removal unit.
- (2) Remove the compression gear cover and spur gear, and then lower the master compression plate.
- (3) Unplug the sensor connector and detach the master compression plate HP sensor.

< Precaution in Reassembly >

Mount the master compression plate at its home position during the assembly.

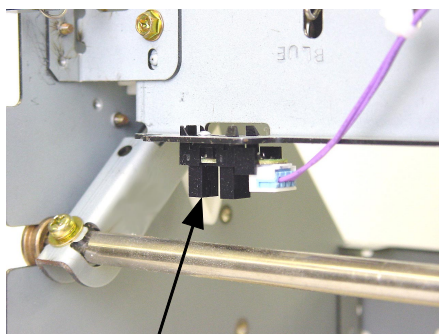


1024



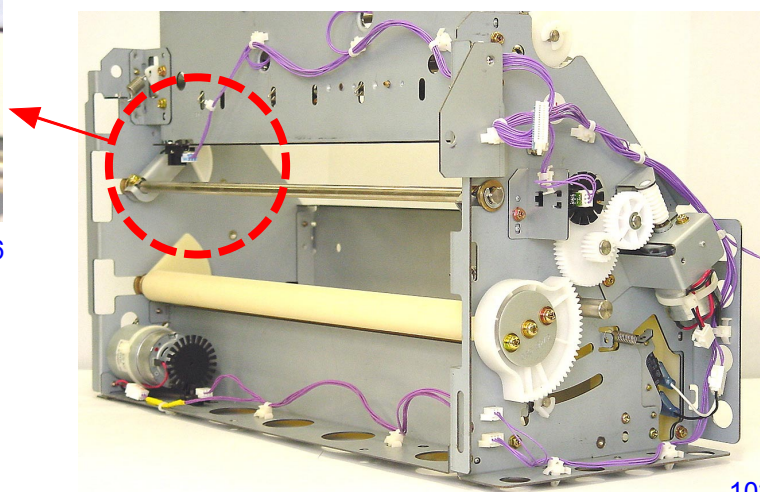
1025

< Master Compression Plate at HP position >



1026

Master compression plate HP sensor

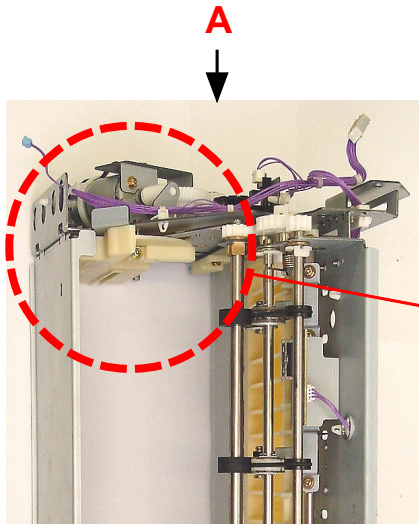


1027

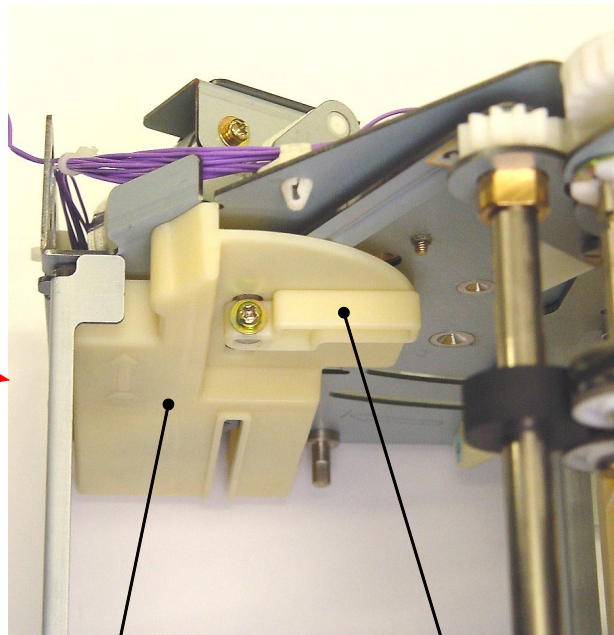
< Master Compression Plate at its lowered position >

7. Removing the Master Disposal Box Safety SW

- (1) Switch off the machine power and detach the master removal unit.
- (2) Remove a screw (M3x6: 1pc) and detach the master disposal roller lock lever.
- (3) Remove screws (M3x8: 3pcs) and detach the master disposal box guiding plate.
- (4) Remove the switch spring.
- (5) Disconnect the switch connector, remove a shoulder screw and detach the master disposal spring safety SW together with switch bracket.



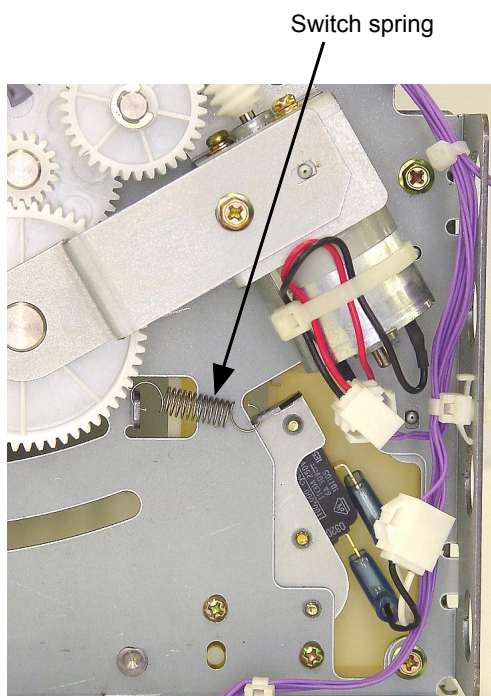
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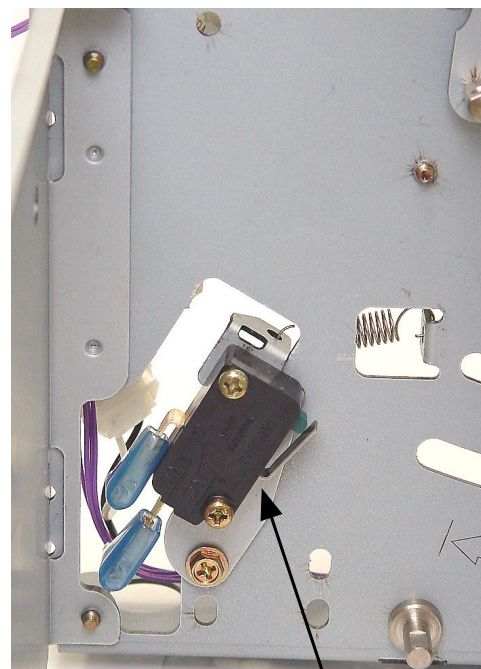
Master disposal box guiding plate

Master removal roller lock lever



< View from A >

1030



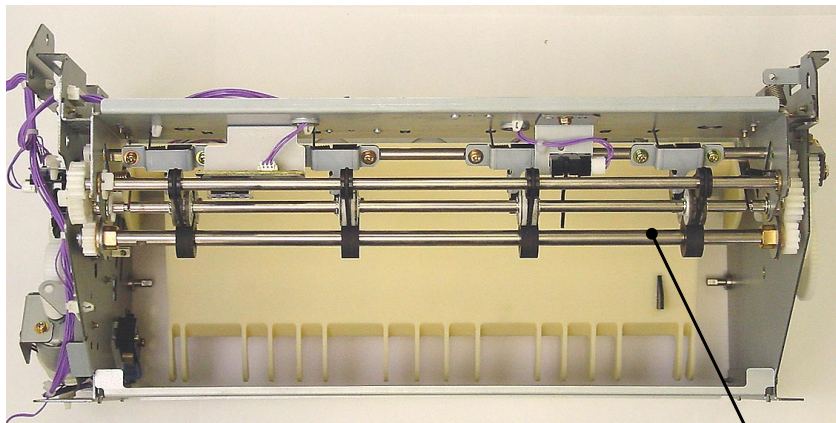
1031

Master disposal box safety SW

8. Removing the Master Removal Roller (Bottom)

- (1) Switch off the machine power and detach the master removal unit.
- (2) Remove the master disposal roller lock lever and master disposal box guiding plate.
- (3) Detach the compression gear cover and spur gear to lower the master compression plate.
- (4) Press the master removal roller release lever to drop the master removal roller (bottom).

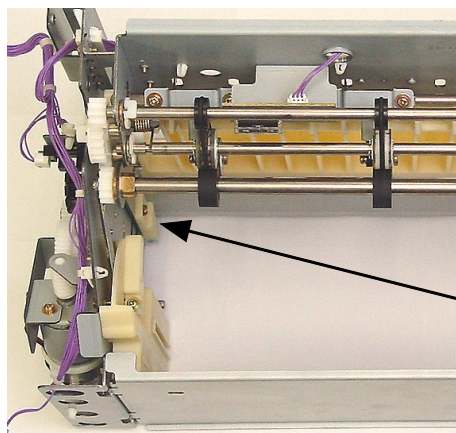
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1032

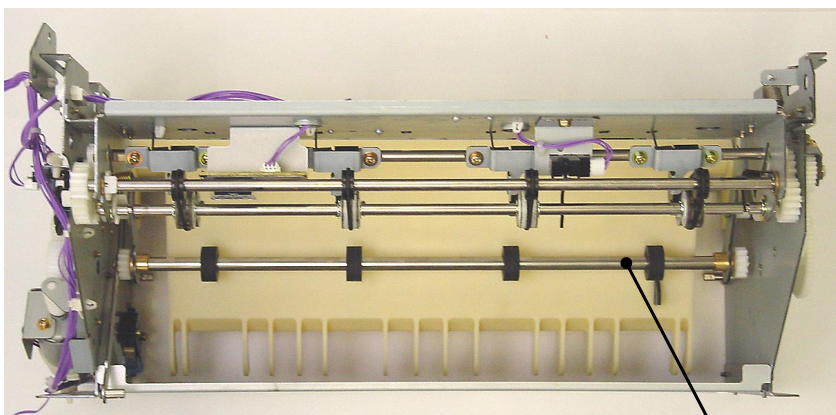
< Master Removal Roller (bottom) in raised position >

Master removal roller (bottom)



1033

Master removal roller release lever

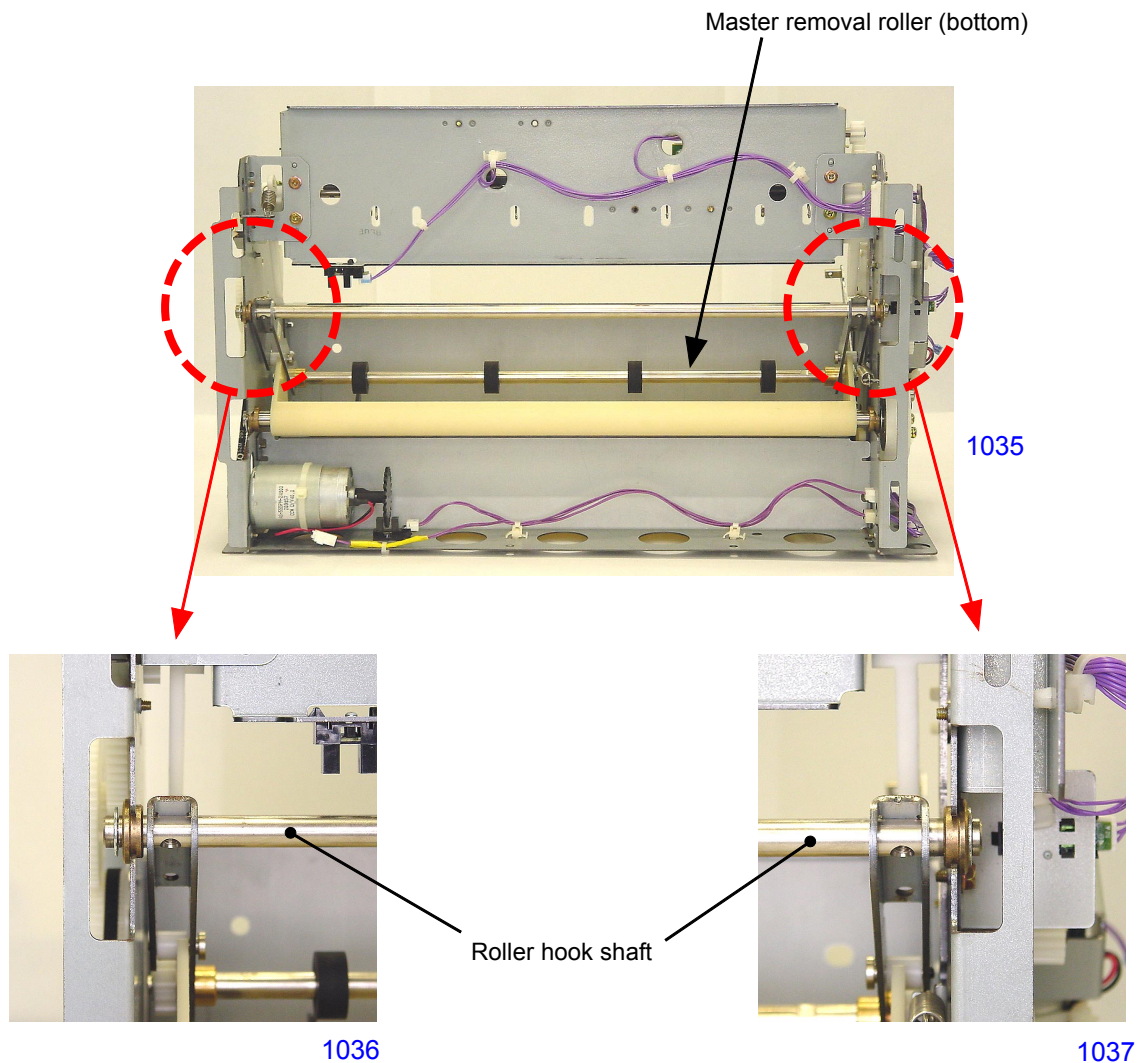


1034

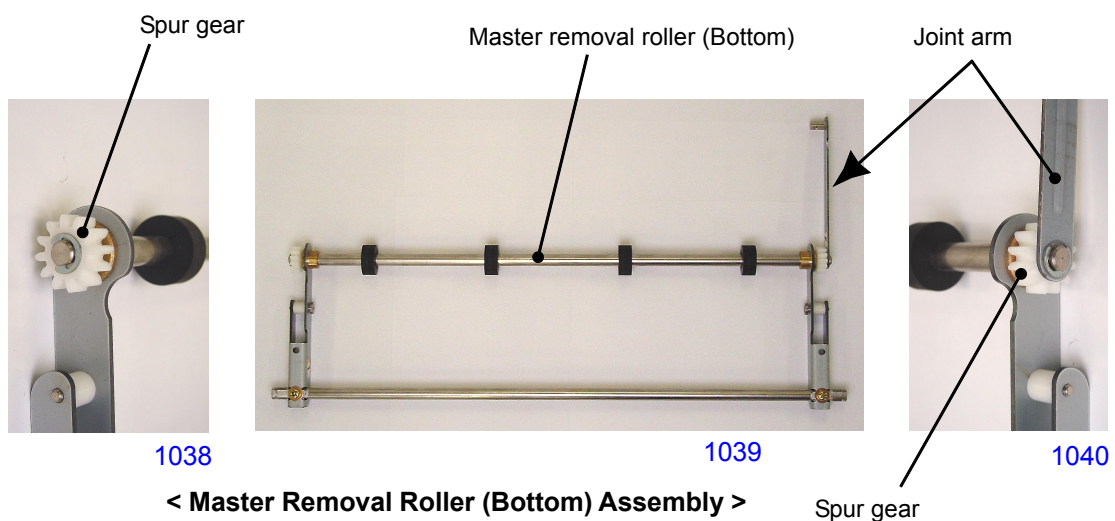
< Master Removal Roller (bottom) in dropped position >

Master removal roller (bottom)

- (5) Remove E-rings and metal bushings from both ends of the roller hook shaft, and detach the master removal roller (bottom) assembly by lifting it upwards.

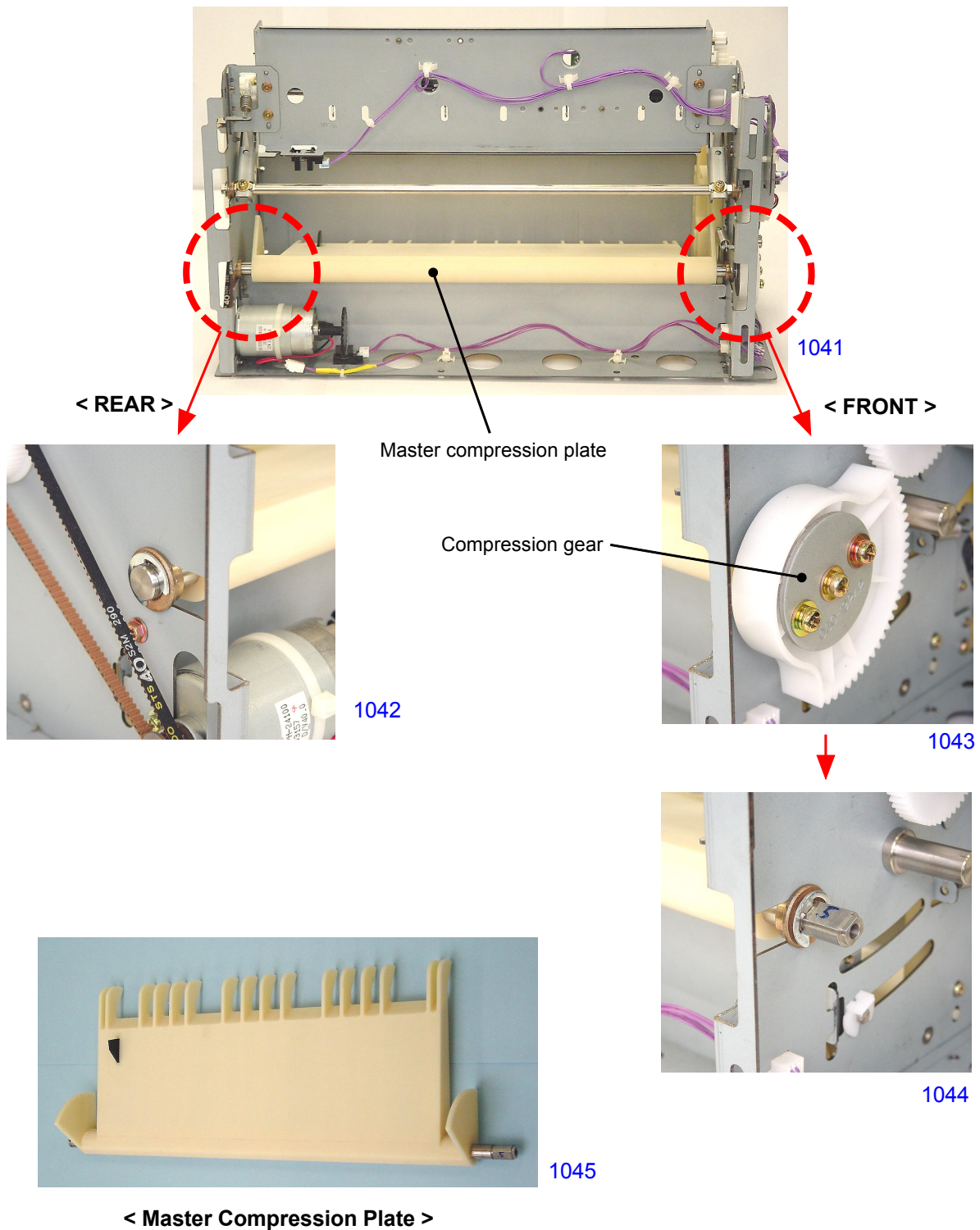


- (6) From the rear tip of the master removal roller (bottom) assembly, remove an E-ring and detach both the spur gear and metal bushing.
- (7) From the front tip of the master removal roller (bottom) assembly, remove an E-ring and detach the joint arm, spur gear, and metal bushing. Detach the master removal roller (bottom) from the assembly.



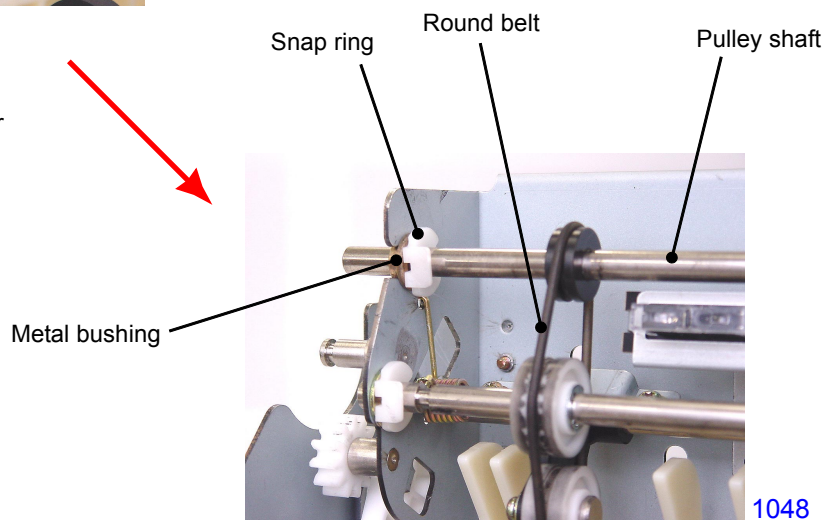
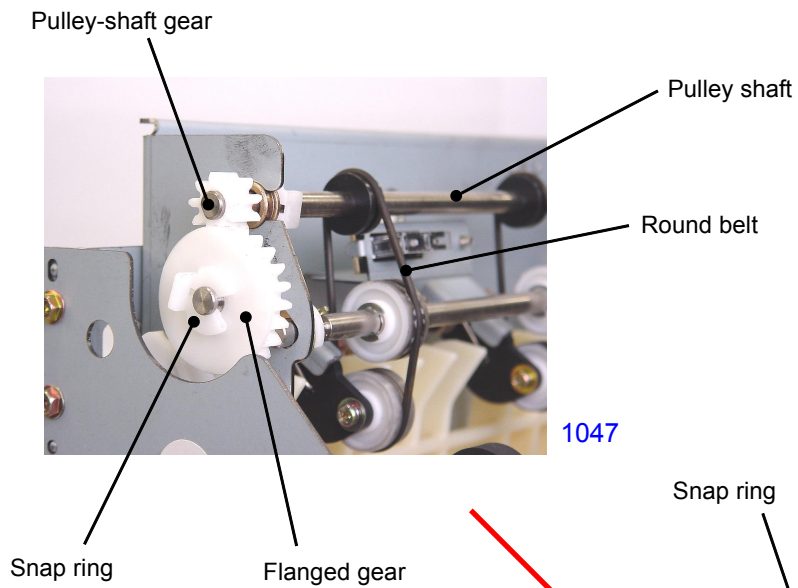
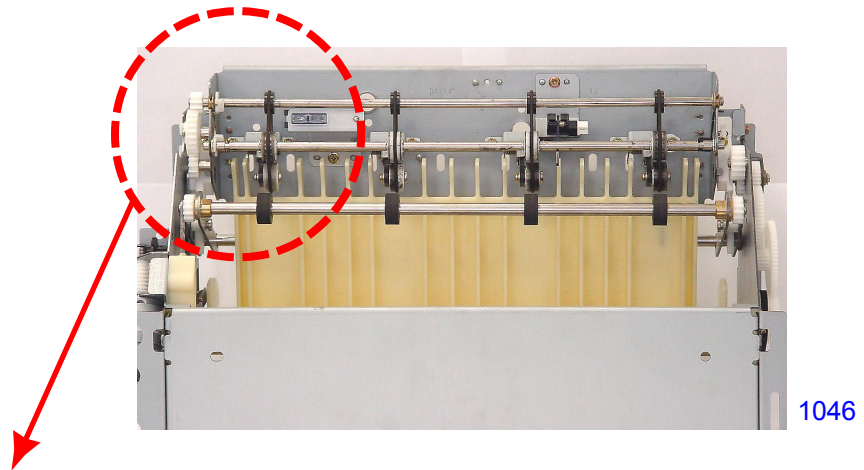
9. Removing the Master Compression Plate

- (1) Switch off the machine power and detach the master removal unit.
- (2) Detach the compression gear cover and spur gear to lower the master compression plate.
- (3) Remove an E-ring and metal bushing from the rear of the unit.
- (4) Remove a screw (M4x8: 1pc) from the front of the unit and detach the compression gear.
- (5) Remove an E-ring and metal bushing from the front of the unit and detach the master compression plate.



10. Removing the Pulley Shaft

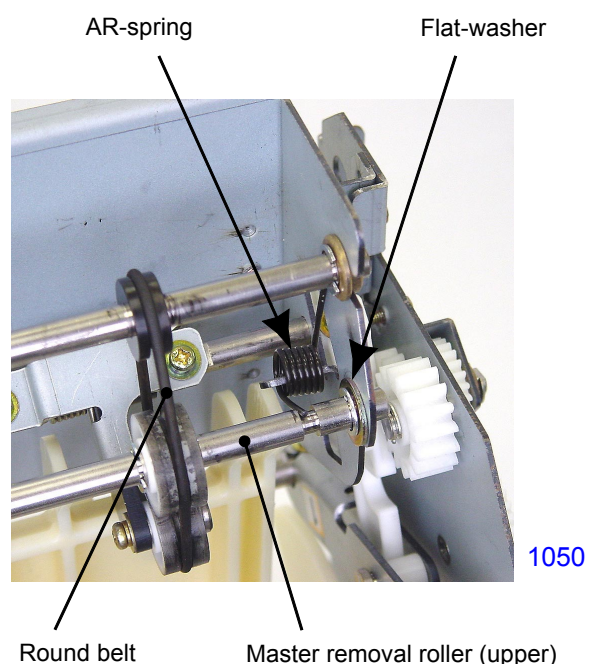
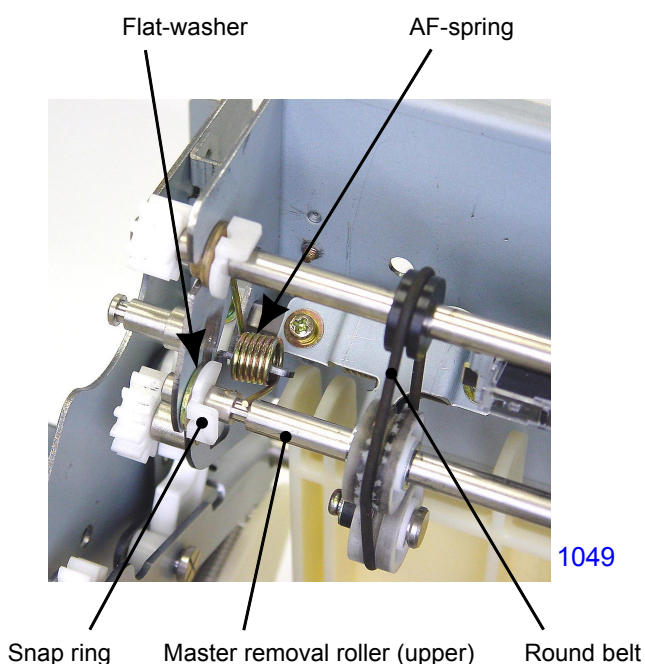
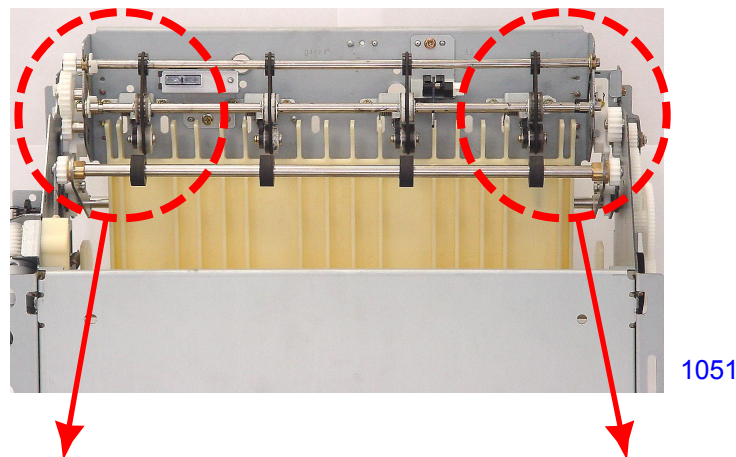
- (1) Switch off the machine power and detach the master removal unit.
- (2) Press the master removal roller release lever to release the master removal roller (bottom).
- (3) Detach the flanged-gear and pulley shaft gear on the operator's side of the master removal unit by removing a snap ring in front of the flanged gear.
- (4) Also on the operator's side of unit, remove a snap ring and unhook the metal bushing from the frame and slide inward. Remove the pulley shaft from the unit by pulling it out through the round belts.



11. Removing the Master Removal Roller (Upper)

- (1) Switch off the machine power and detach the master removal unit.
- (2) Press the master removal roller release lever to release the master removal roller (bottom).
- (3) Detach the flanged-gear on the operator's side of the master removal unit by removing a snap ring in front of the flanged gear.
- (4) Remove the AF-spring and AR-spring from the master removal unit.
- (5) Unhook the round belts from the pulleys on the master removal roller (upper).
- (6) Remove a snap ring from the front (operator's side) of the master removal roller (upper). Slide the shaft of the roller to the front to free the rear side of the roller off the frame of the master removal unit. Remove the flat-washer from the shaft. Free the front side of the roller shaft from the frame of the unit and remove the flat-washer from the shaft on the front side also. Pull the master removal roller (upper) out through the round belts.

* Do not lose the two flat-washers, and do not forget to put them during the assembly.



12. Removing the Round Belts

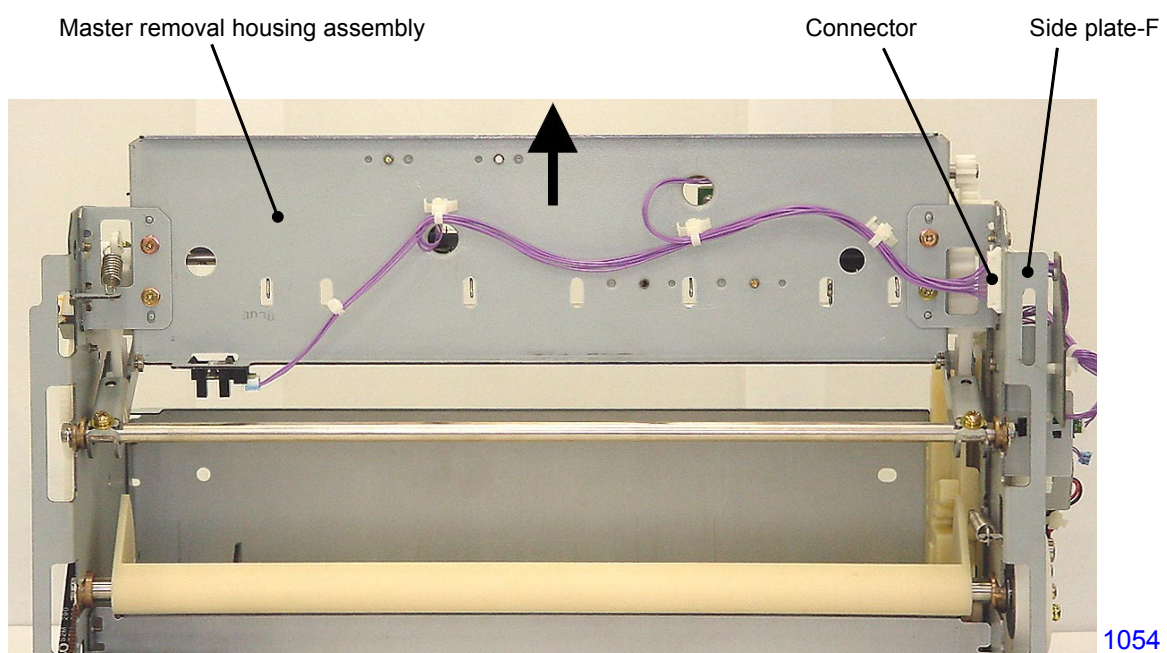
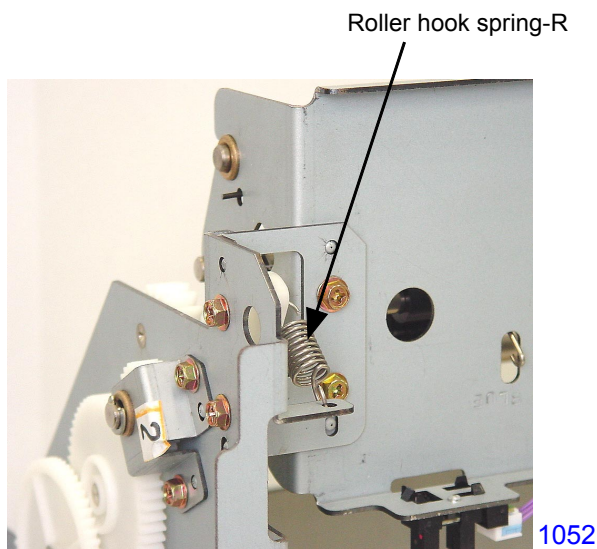
- (1) Switch off the machine power and detach the master removal unit.
- (2) Press the master removal roller release lever to release the master removal roller (bottom).
- (3) Removing the following two components enable the round belts to be removed.
 - Pulley-shaft
 - Master removal roller (upper)

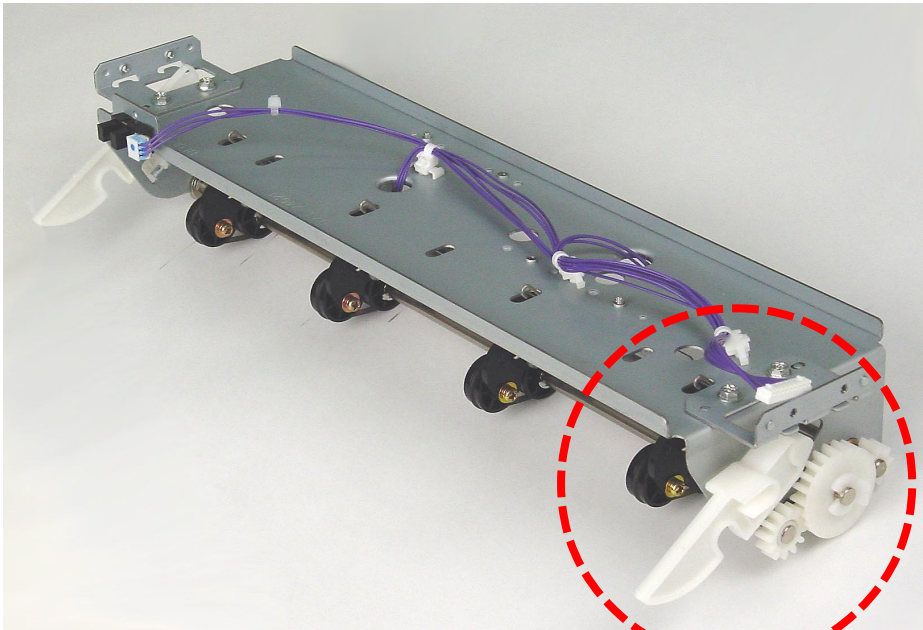
13. Removing the Master Removal Housing Assembly

- (1) Switch off the machine power and detach the master removal unit.
- (2) Detach the compression gear cover and spur gear to lower the master compression plate.
- (3) Press the master removal roller release lever to release the master removal roller (bottom).
- (4) Detach the roller hook spring-R from the rear.
- (5) Detach the release lever spring from the front, watching out for injuries as the spring is strong.
- (6) Disconnect the connector from the side plate-F, and by remove screws (M3x6: 2pcs each) from the front and rear, remove the master removal housing assembly by sliding it out towards the paper ejection side.

< Precaution on reassembly >

- Fit the boss on the release lever into the groove on the roller hook-F.

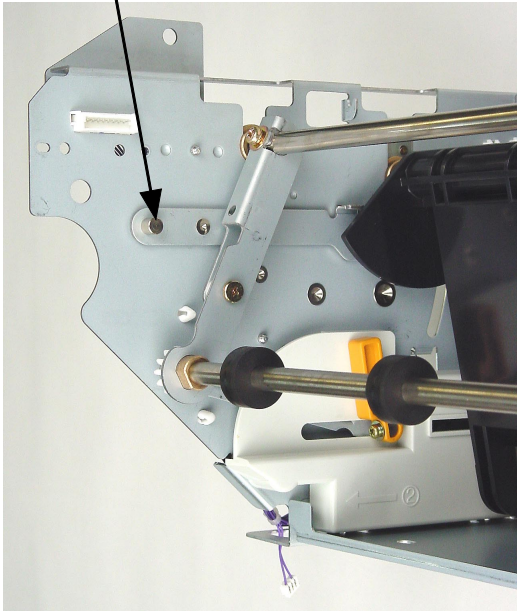




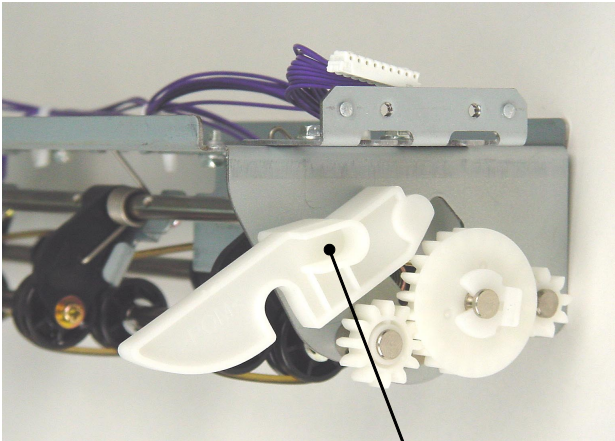
1055

< Master Removal Housing Assembly >

Boss on the release lever



1056



1057

Groove on the roller hook-F

MEMO

CHAPTER 11: FB ORIGINAL SCANNING SECTION (RZ3 Series)

Contents

MECHANISM

1. Original Scanning Mechanism	11-2
2. Flatbed Initialization Movement	11-4
3. Stage-Glass Original Detection Mechanism	11-5
4. FB Auto-Base-Control	11-5
5. FB Scanning Mechanism	11-6

DISASSEMBLY

1. Removing the Scanner Unit	11-7
2. Removing the Stage Glass	11-8
3. Removing the FB Original Detection Sensor	11-9
4. Removing the Scanner Lamp	11-10
5. Removing the CCD Unit	11-11
6. Removing the FB/AF HP Sensor	11-12
7. Removing the FB Read Pulse Motor	11-13

ADJUSTMENT

1. FB Read Pulse Motor Speed Adjustment (Image Elongation & Shrinkage in Scanning) .	11-14
2. FB Scan Start Position Adjustment	11-14
3. FB Horizontal Scan Position Adjustment	11-14

Mechanism

1. Original Scanning Mechanism

The FB read pulse motor drives the front and rear wire drum by timing belts with the speed reduced by two speed reduction pulleys.

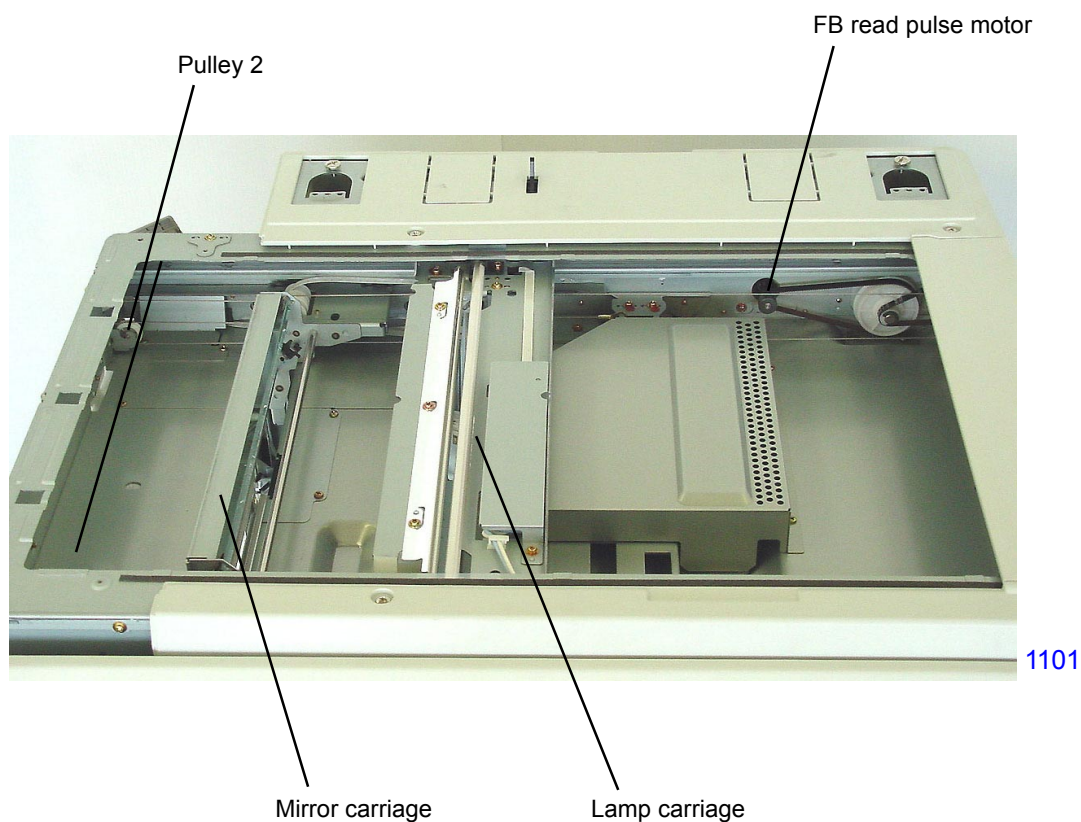
The wire drive system for the front and rear are symmetrically made.

One end of the wire is secured to the front side of the scanner unit frame and from there it goes around pulley No.2 mounted on the mirror carriage. It then goes around the pulley fixed on the front side of the scanner unit frame and then wound on wire spool pulley located at the back of the scanner unit. From the wire spool pulley, the wire is attached onto the lamp carriage. It then continues to go around the pulley No.1 on the mirror carriage and finally the other end is fixed on the frame of the scanner unit.

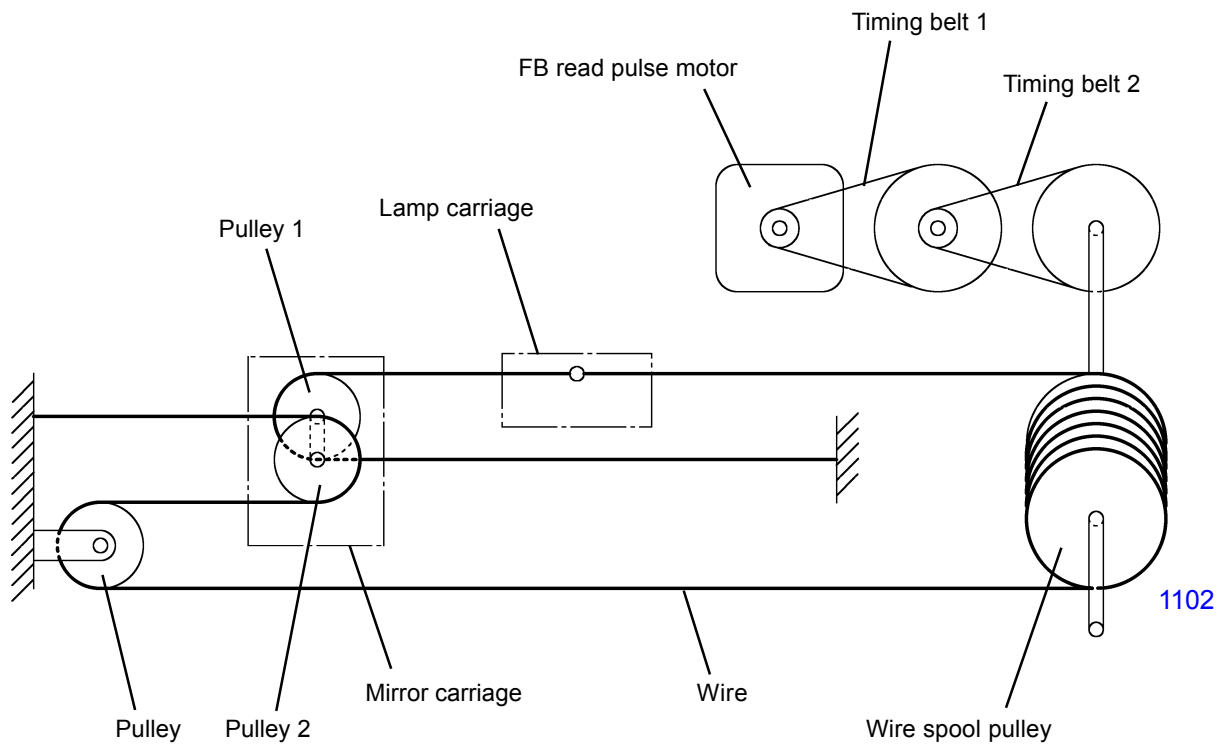
The lamp carriage is mounted with one original illumination lamp, a reflector, a lamp inverter, and mirror No.1. The mirror carriage is provided with mirrors No. 2 and No.3.

The mechanism uses a "full/half-rate mirror scanning" system, in which the mirror carriage moves $1/2 L$ mm as the lamp carriage moves L mm in the same direction. This means that when the FB read pulse motor is activated, the original can be scanned while maintaining a constant distance between the original and the lens on the CCD assembly mounted on the scanner unit.

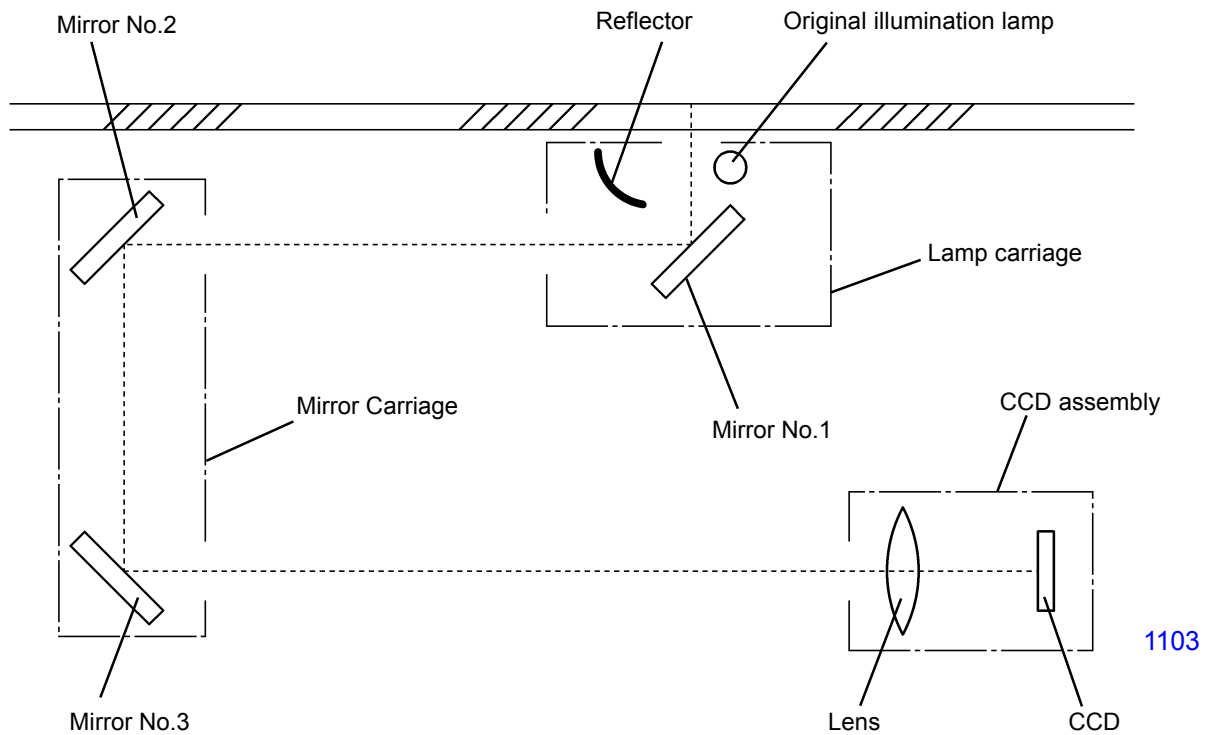
The original on the scanner table illuminated by the lamp is reflected via mirrors No.1, 2, and 3, and the scanned image is then focused onto the CCD by the lens on the CCD assembly.



Drive system diagram



Optical system diagram



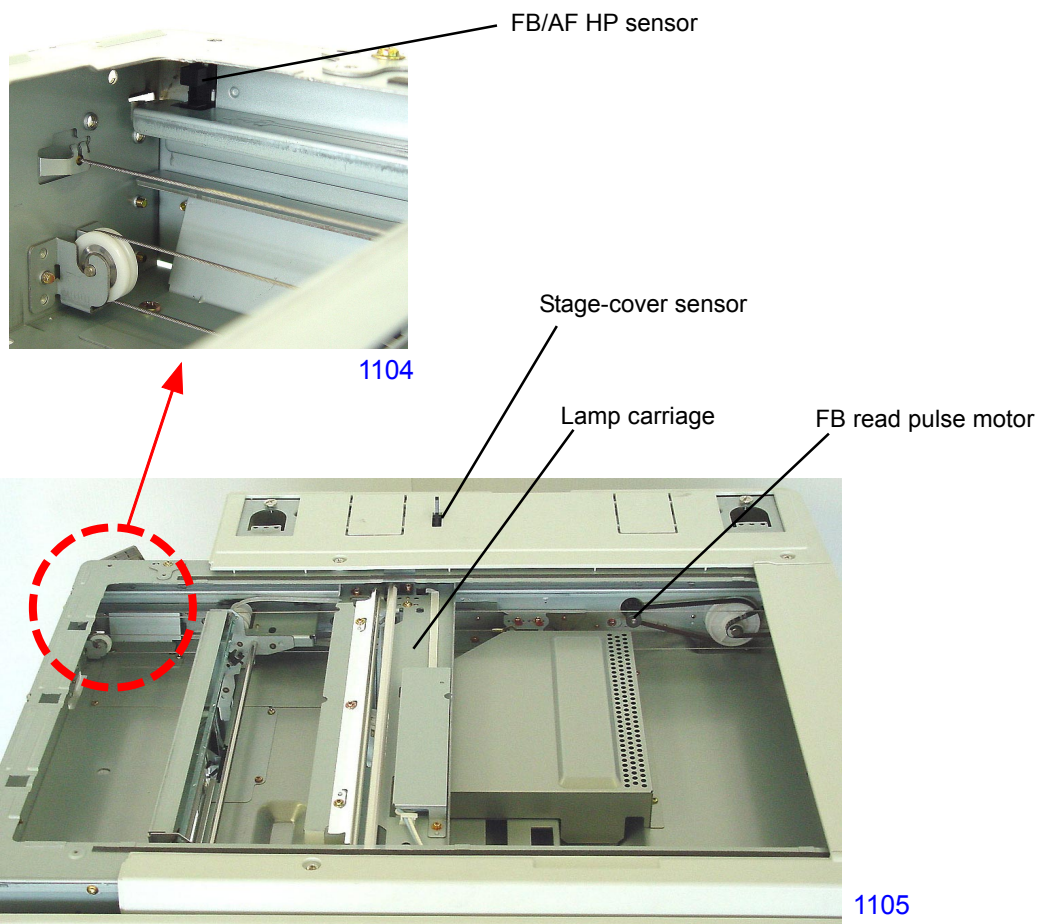
2. Flatbed Initialization Movement

Initialization is performed in the following situations to bring the flatbed unit to the home position.

- When the machine power is switched on.
- When recovering from the sleeping mode (wake-up).

Initialization operation

- (1) When either one of the above two conditions is activated, if the FB/AF HP sensor is detecting the lamp carriage, the FB read pulse motor rotates in the scanning direction to move the lamp carriage out of the sensor detection. Once the lamp carriage escapes from the sensor detection, the FB read pulse motor rotates in the return direction until the sensor detects the lamp carriage again and keeps on moving until the lamp carriage moves 8mm further from the first detected position and stops. This is called the home position, and at the home position the sensor is still detecting the carriage.
- (2) If the lamp carriage was not detected when either one of above two conditions is activated, the FB read pulse motor rotates in the reverse direction to move the carriage back 8mm and stops. If the HP sensor detects the carriage during this movement, the initialization movement explained in the above paragraph (1) takes place. If the carriage was not detected during the 8mm reverse movement, the pulse motor rotates in the forward direction to move the carriage 8mm in the scanning direction. Then the pulse motor rotates in the reverse direction to bring the carriage back until the HP sensor detects the carriage and stops after the carriage moves 8mm from the detected position (home position).
- (3) In the case the machine power switch is turned ON and after the initialization movement is made, both the offset and gain adjustments are performed. Then, the initialization movement explained by above paragraph (2) is made.



3. Stage-Glass Original Detection Mechanism

The FB original detection sensor checks whether an original has been placed on the stage glass. As soon as the stage cover is closed halfway, blocking the light path to the stage-cover sensor, the FB original detection sensor checks whether there is an original on the stage glass. If the flatbed original detection sensor is receiving light (original present), the indication on the operation panel changes to "Master Making" and the shading-compensation and auto-base-control adjustment are performed. The lamp carriage is then moved to the scanning standby position with the scanner lamp turned on. If the Start key is pressed within 60 seconds, the scanning operation starts.

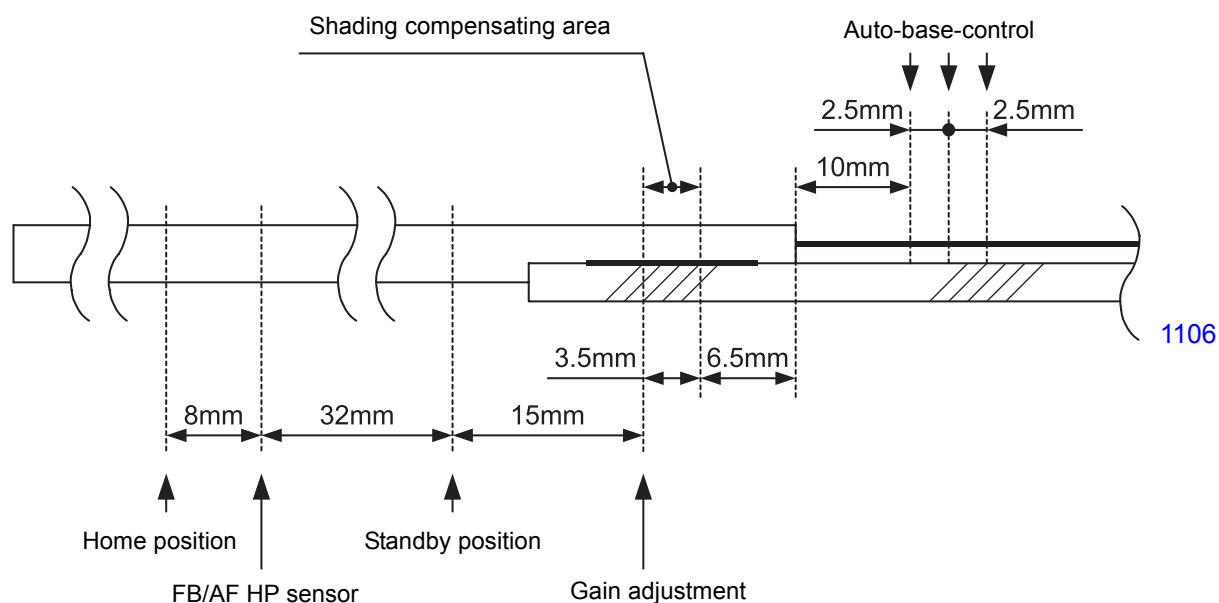
If the Start key is not pressed within 60 seconds, the scanner lamp turns off and the lamp carriage returns back to the home position.

4. FB Auto-Base-Control

When an original is set and the stage cover is closed, or when the original scanning density is set to "AUTO" and if the operation starts from the lamp carriage at home position, the auto-base-control, which is explained below, is conducted after the shading-compensation is performed.

With an original set on the scanner table and when the stage-cover sensor detects the stage cover closed, or when the Start key is pressed, the scanner lamp illuminates and the FB read pulse motor rotates in the scanning direction. At a distance of 47mm after the lamp carriage escapes from the FB/AF HP sensor, the lamp carriage stops for a very short period and moves another 3.5mm in which the shading-compensation is made. After the shading-compensation is performed, the lamp moves 16.5mm in the scanning direction (10mm from the leading edge of the original) and the CCD reads the color density of the original background. The original background is read two more times after moving the lamp 2.5mm in distance the each time. Therefore, the auto-base-control scanning is made 3 times in total.

The FB read pulse motor then rotates in the reverse direction to bring the lamp carriage back to the standby position and starts the original scanning.



5. FB Scanning Mechanism

When the Start key is pressed, the FB read pulse motor activates to move the lamp carriage in the scanning direction. After the top 4 mm of the original is skipped, the read signal turns ON and the original scanning operation starts.

Once the scanning is made for a specific given distance, the scanner lamp turns off to end the scanning operation.

If the Book mode scanning is selected, the read signal is turned off for the length of 20mm in the center of the paper size set on the paper feed tray.

The lamp carriage returns back to the home position after the scanning operation is finished.

Disassembly

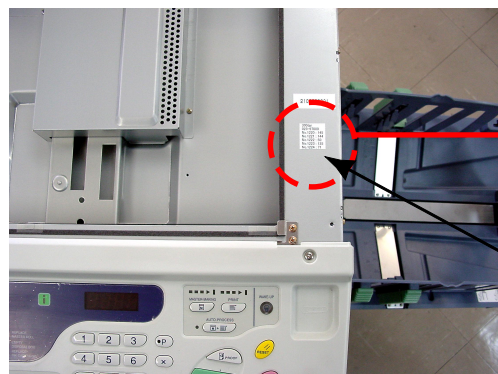
1. Removing the Scanner Unit

- (1) Switch off the machine power and remove the following covers.
 - Stage cover
 - Scanner cover;paper feed
 - Scanner cover;paper ejection
 - Scanner cover;rear
 - Operation panel
- (2) Detach the stage-cover sensor by removing one screw (M4x8: 1pc) and disconnecting a connector.
- (3) Disconnect the relay PCB connector.
- (4) Disconnect the FB read pulse motor connector.
- (5) Disconnect the scanner wire harness (flat-cable) connector.
- (6) Remove the two hinge brackets by removing screws (M4x8: 2pcs each).
- (7) Remove screws (M4x8: 6pcs) securing the scanner bracket onto the machine, and lift and remove the scanner unit. **(This is a heavy precision component. Handle with care.)**



< Precautions in Assembly >

- (1) When replacing with a new scanner unit, make sure to remove the large screw which fixes the mirror carriage on the scanner unit for the transportation purpose.
- (2) Prior to reassembly, memo down the information label located on the top right of the scanner unit, listing the necessary Test Mode adjustments for the scanner unit.



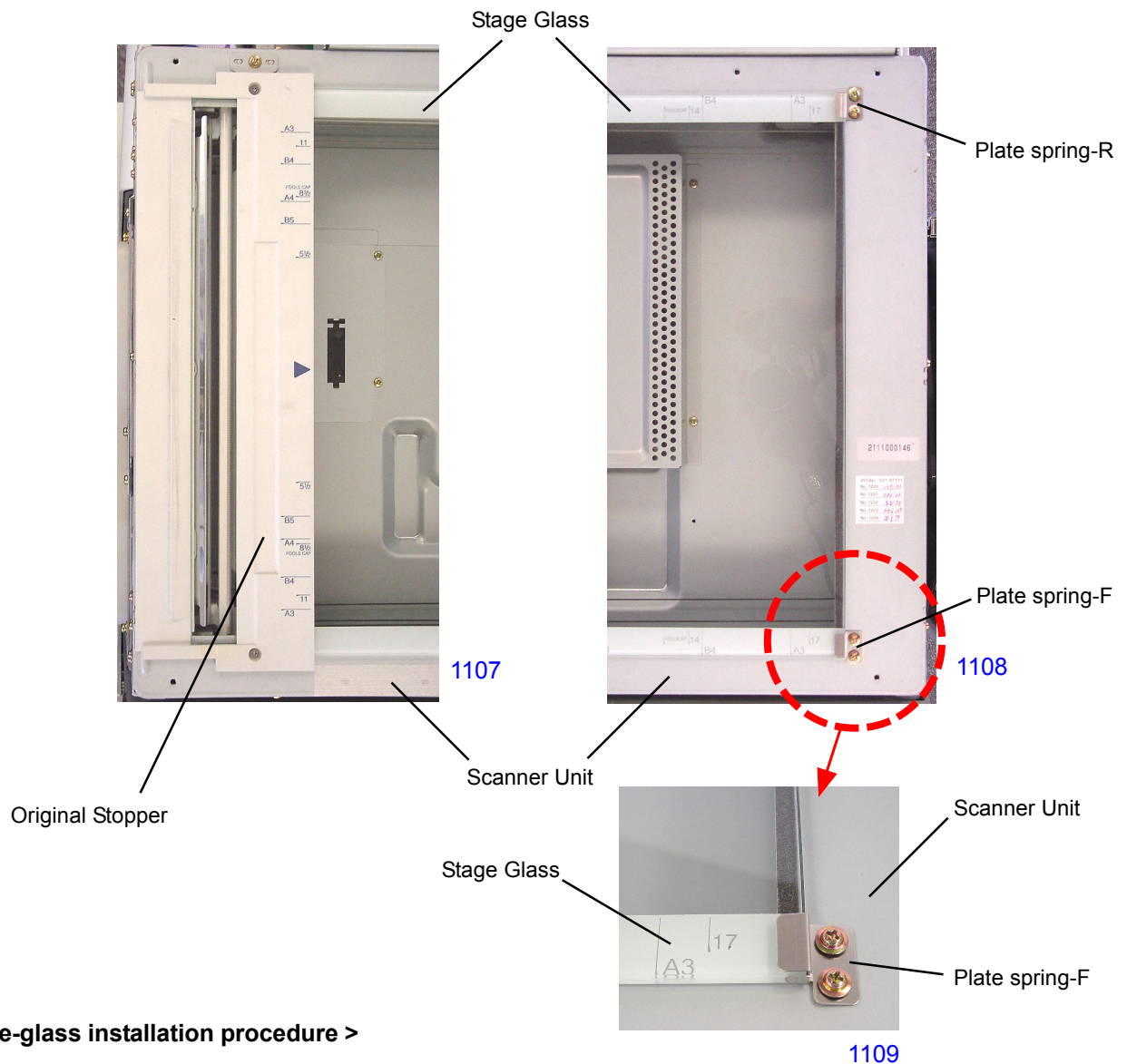
< Enlarged View >

300dpi
023-97000
No.1220 : 145
No.1221 : 144
No.1222 : 50
No.1223 : 135
No.1224 : 71

< EXAMPLE >

2. Removing the Stage Glass

- (1) Switch off the machine power and remove the following covers.
 - Stage cover
 - Scanner cover;paper feed
 - Scanner cover;paper ejection
 - Scanner cover;rear
 - Operation panel
- (2) Remove two shoulder screws and detach the original stopper.
- (3) Detach the plate springs F & R by removing screws (M3x6: 2pcs each).
- (4) Lift and remove the stage glass.



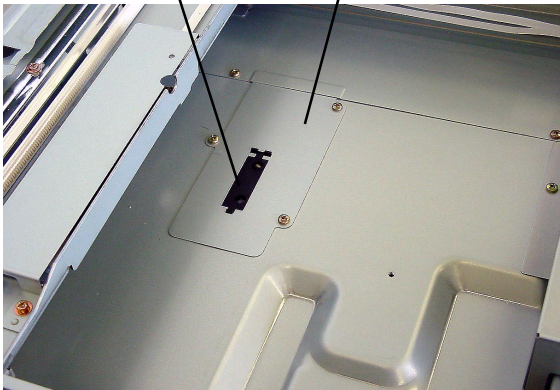
< Stage-glass installation procedure >

- (1) Put the stage glass on the scanner unit.
- (2) Install the original stopper.
- (3) Push and slide the stage glass against the original stopper.
- (4) Install the plate springs F & R, pushing tightly against the stage glass, and secure with screws.
- (5) Reinstall the covers.

3. Removing the FB Original Detection Sensor

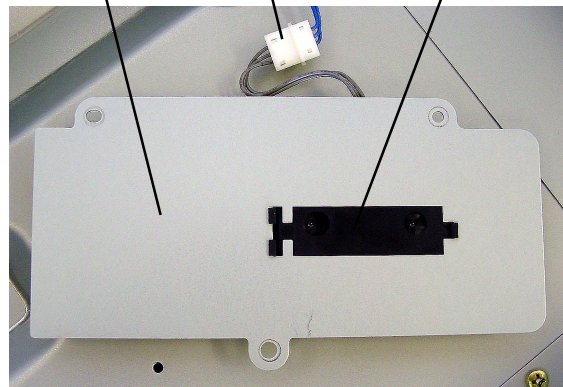
- (1) Switch off the machine power and remove the stage glass.
- (2) Remove screws (M3x6: 3pcs), lift the sensor cover with the FB original detection sensor attached. Disconnect the sensor connector and detach the FB original detection sensor together with the sensor cover.
- (3) Disengage the claws (3 locations) on the FB original detection sensor from the sensor cover to detach the sensor.

FB original detection sensor Sensor cover



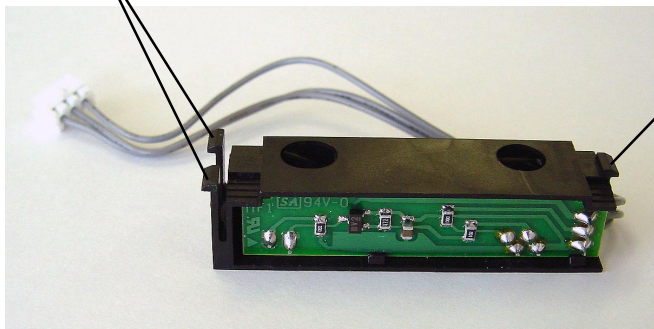
1110

Sensor cover Connector FB original detection sensor



1111

Sensor claws



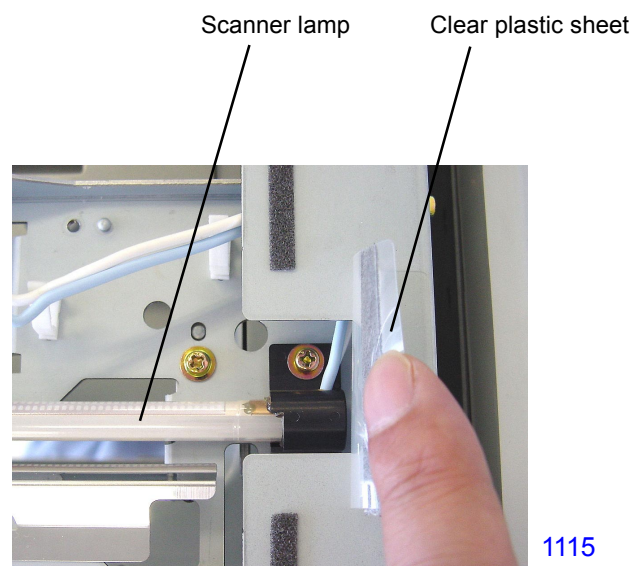
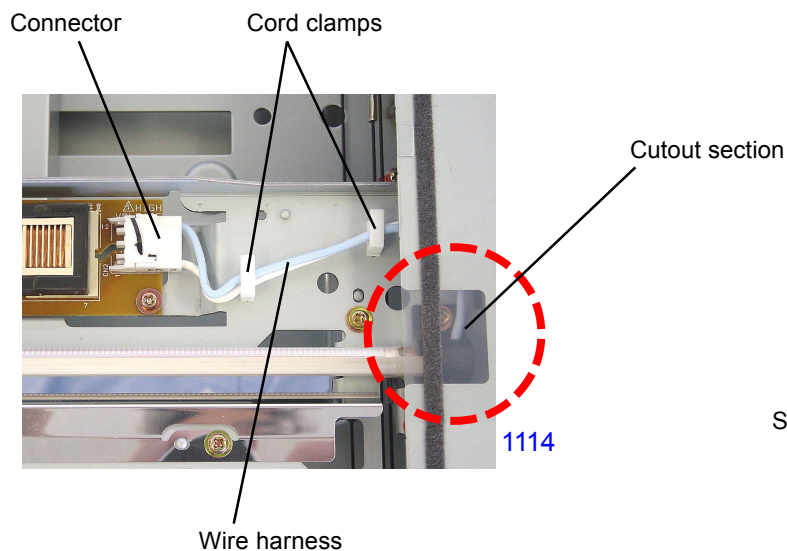
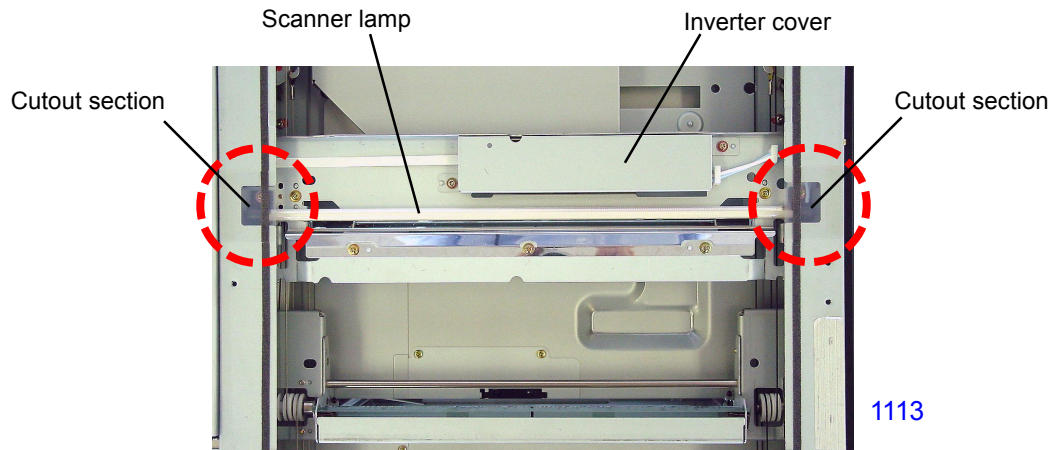
Sensor claw

1112

< FB Original Detection Sensor >

4. Removing the Scanner Lamp

- (1) Run Test Mode No.287 (scanner lamp replace positioning) and switch off the machine power.
- (2) Remove the stage glass.
- (3) Remove screws(M3x6: 2pcs) and detach the inverter cover.
- (4) Unhook the wire harness to the scanner lamp from the cord clamps (2 locations), and disconnect the connector from the inverter.
- (5) By lifting the clear plastic sheet on the cutout section of the scanner unit, remove screws (M3x6: 1pc each) from the both sides, and detach the scanner lamp.



5. Removing the CCD Unit

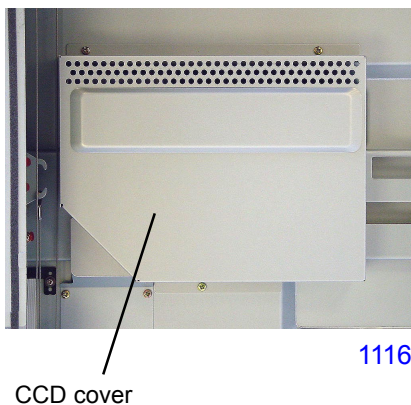
- (1) Switch off the machine power and remove the stage glass.
- (2) Remove screws (M3x6: 3pcs) and detach the CCD cover.
- (3) Disconnect the CCD cable from the CCD PCB while supporting the PCB firmly by hand.
- (4) Remove screws (M3x6: 3pcs) and detach the CCD unit.

< CCD Unit Installation Procedure >

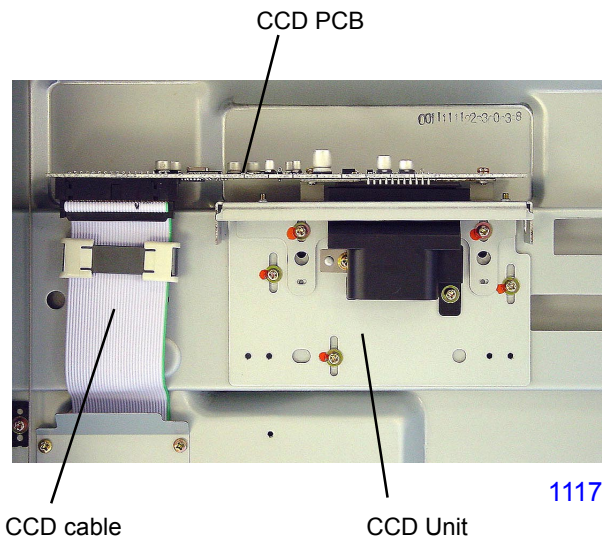
- (1) The replacement CCD unit is pre-adjusted at the factory with the positioning brackets attached on the left and right of the unit for a correct positioning. Therefore, fit the holes on the positioning brackets into the positioning pins on the scanner unit, and secure the CCD unit in place using three screws.
- (2) After the CCD unit is firmly screwed onto the scanner unit, unscrew and detach the positioning brackets off the left and right of the CCD unit.
- (3) Connect the CCD cable onto the CCD PCB while supporting the PCB firmly by hand.

< Precautions in Assembly >

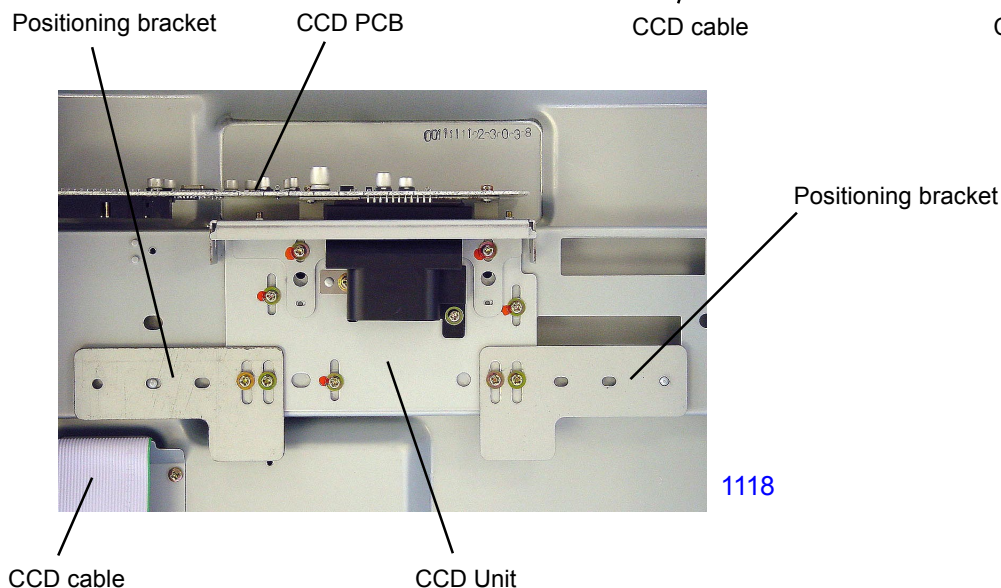
To prevent damages to the CCD PCB, firmly support the PCB by hand while connecting or disconnecting the CCD cable to the PCB.



1116



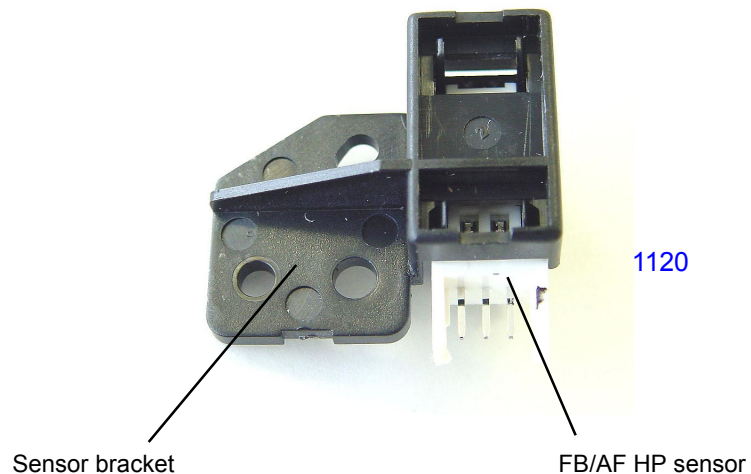
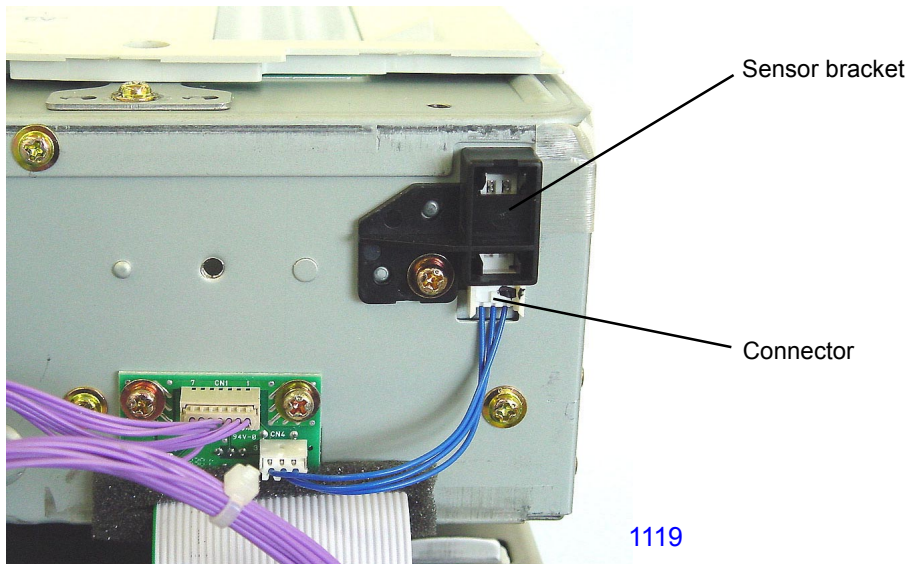
1117



1118

6. Removing the FB/AF HP Sensor

- (1) Switch off the machine power and remove the scanner cover;paper feed.
- (2) Detach the FB/AF HP sensor, together with the sensor bracket, from the scanner unit by removing screw (M3x6: 1pc), and disconnect the connector to the sensor.
- (3) Disengage the claws on the FB/AF HP sensor from the sensor bracket to remove the sensor.

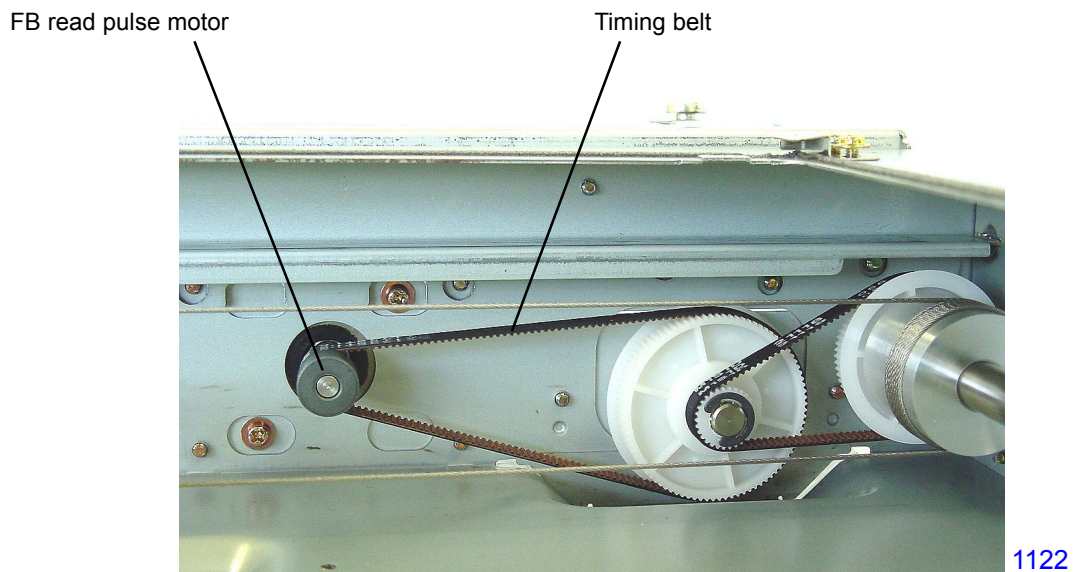
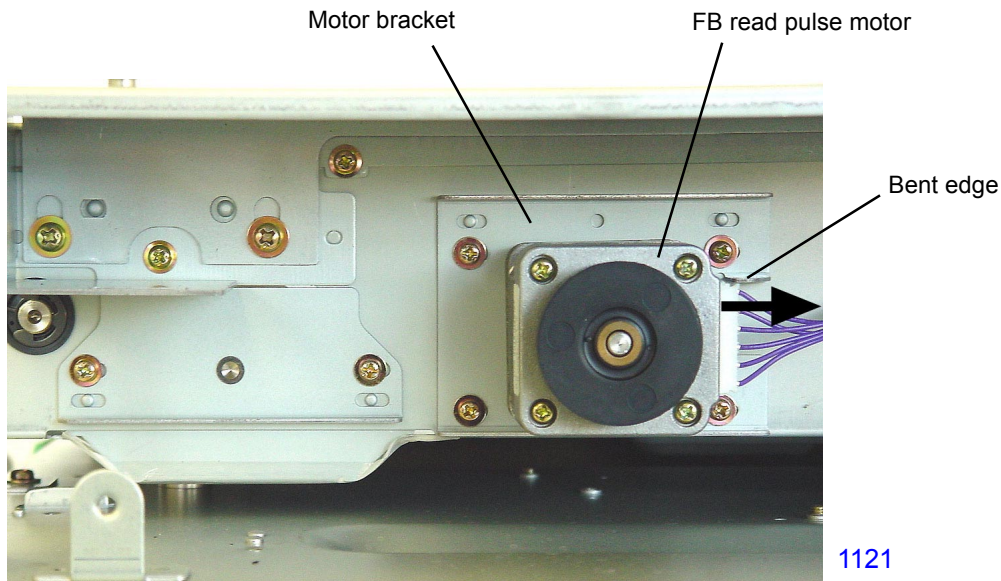


7. Removing the FB Read Pulse Motor

- (1) Switch off the machine power and remove the scanner cover; paper feed.
- (2) Remove the mounting screws (M3x6: 4pcs) of the FB read pulse motor mounting bracket, unhook the timing belt located inside the scanner unit and detach the motor with the mounting bracket attached.
- (3) Detach the FB read pulse motor from the bracket by removing screws (M3x6: 2pcs).

< Precaution in Assembly >

Pull the bent edge of the motor bracket in the direction indicated by an arrow on the photograph below to apply adequate tension to the timing belt when tightening the mounting screws of the FB read pulse motor bracket onto the scanner unit.



Adjustment

1. FB Read Pulse Motor Speed Adjustment (Image Elongation & Shrinkage in Scanning)

Checks and adjustment

- (1) Set A3-size papers on the paper feed tray and place Test Chart No.11 on the stage glass. Make a master and print.
- (2) Lay the printed paper on top of the test chart original to check that the image elongation and shrinkage, if exists, is within plus/minus 1.4% compared from the top to the 350mm line of the test chart original.
- (3) If the elongation or shrinkage is over the specified range, make an adjustment using Test Mode No. 382 (FB Scanning Speed Adjustment).

Make sure that master-making elongation/shrinkage adjustment is already made prior to this scanning adjustment.

2. FB Scan Start Position Adjustment

Checks and adjustment

- (1) Set A3-size papers on the paper feed tray and place Test Chart No.11 on the stage glass. Make a master and print.
- (2) Check the prints and confirm that 4mm plus/minus 2mm of the scaled line on top of the test chart is erased on the prints (the scanning is omitted for this distance).
- (3) If the scanning start position is out of the specified range, make an adjustment using Test Mode No. 381 (FB Scan Start Position Adjustment).

3. FB Horizontal Scan Position Adjustment

Checks and adjustment

- (1) Set A3-size papers on the paper feed tray and place Test Chart No.14 on the stage glass. Make a master and print.
- (2) Look at the master made on the print drum. Confirm that all the “e” images are made on the right and left of the master on the print drum.
- (3) If any of the “e” images are omitted, make an adjustment using Test Mode No. 380 (FB Horizontal Scan Position Adjustment).

CHAPTER 12:FB ORIGINAL SCANNING SECTION (RZ2 Series)

Contents

MECHANISM

1. Scanning Mechanism	12-2
2. Flatbed Initialization Movement	12-3
3. Stage-Glass Original Detection Mechanism	12-4
4. FB Scanning Mechanism	12-4

DISASSEMBLY

1. Removing the Scanner Unit	12-5
2. Removing the Stage Glass	12-6
3. Removing the FB Original Detection Sensor	12-7
4. Removing the FB/AF HP Sensor	12-8
5. Removing the Image Scanner	12-9
6. Removing the FB Read Pulse Motor	12-10

ADJUSTMENT

1. FB Read Pulse Motor Speed Adjustment (Image Elongation & Shrinkage in Scanning) .	12-11
2. FB Scan Start Position Adjustment	12-11
3. FB Horizontal Scan Position Adjustment	12-11
4. Image Scanner Position Adjustment	12-12

Mechanism

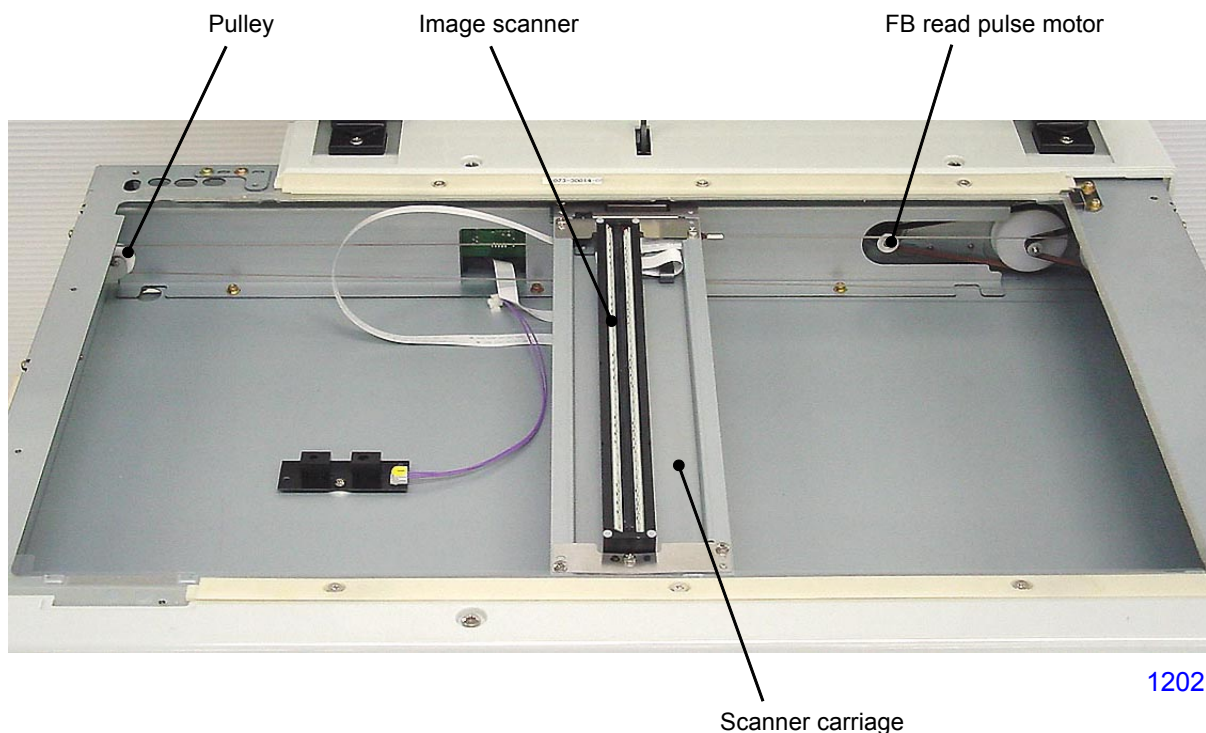
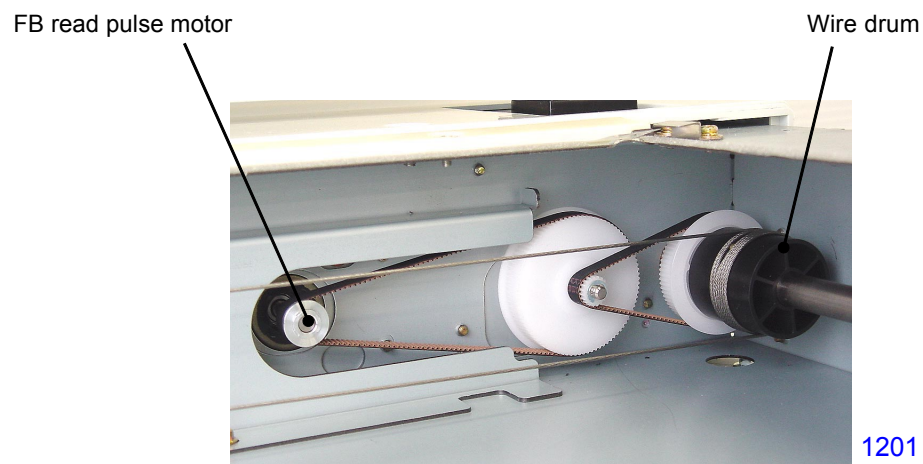
1. Scanning Mechanism

The FB read pulse motor drives the front and rear wire drum by timing belts with the speed reduced by two speed reduction pulleys.

The wire drive system for the front and rear are symmetrically made.

The wire is wound on the wire drum located at the back of the scanner unit. One end of the wire from the wire drum is attached directly onto the image scanner carriage. The other end of the wire goes around the pulley attached on the front frame of the scanner unit and attached onto the image scanner carriage.

When the FB read pulse motor is rotated, the image scanner carriage travels under the stage glass and scans the image on the original.



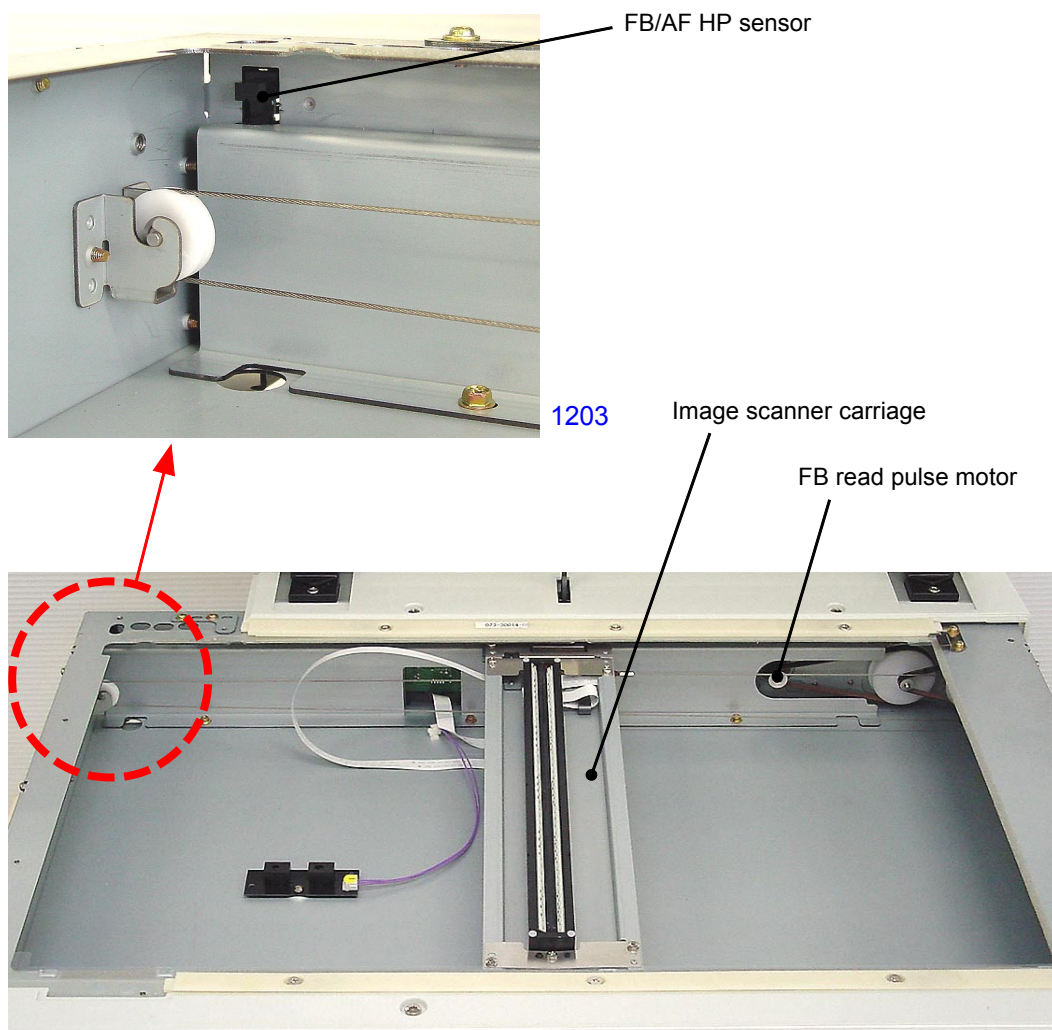
2. Flatbed Initialization Movement

Initialization is performed in the following situations to bring the flatbed unit to the home position.

- When the machine power is switched on.
- When recovering from the sleeping mode (wake-up).

Initialization operation

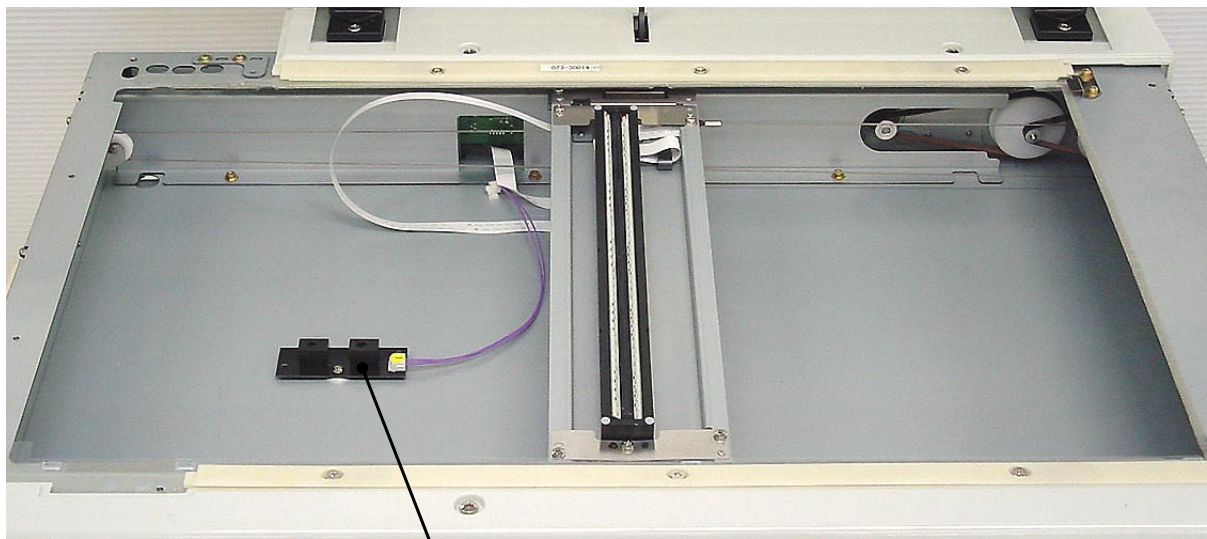
- (1) When either one of the above two conditions is activated, if the FB/AF HP sensor is detecting the image scanner carriage, the FB read pulse motor rotates in the scanning direction to move the lamp carriage out of the sensor detection. Once the carriage escapes from the sensor detection, the FB read pulse motor rotates in the return direction until the sensor detects the carriage again and keeps on moving until the carriage moves 8mm further from the first detected position and stops. This is called the home position, and at the home position the sensor is still detecting the carriage.
- (2) If the image scanner carriage was not detected when either one of above two conditions is activated, the FB read pulse motor rotates in the reverse direction to move the carriage back 8mm and stops. If the HP sensor detects the carriage during this movement, the initialization movement explained in the above paragraph (1) takes place. But if the carriage was not detected during the 8mm reverse movement, the pulse motor rotates in the forward direction to move the carriage 8mm in the scanning direction. Then the pulse motor rotates in the reverse direction to bring the carriage back until the HP sensor detects the carriage and stops after the carriage moves 8mm from the detected position (home position).
- (3) In the case the machine power switch is turned ON and after the initialization movement is made, both the gain and AD reference adjustments are performed. Then, the initialization movement explained by above paragraph (2) is made.



3. Stage-Glass Original Detection Mechanism

The FB original detection sensor checks whether an original has been placed on the stage glass. As soon as the stage cover is closed halfway, blocking the light path to the stage-cover sensor, the FB original detection sensor checks whether there is an original on the stage glass. If the flatbed original detection sensor is receiving light (original present), the indication on the operation panel changes to “Master Making” and the shading-compensation is performed. The image scanner carriage is then moved to the scanning standby position with the image scanner lamp turned on. If the Start key is pressed within 60 seconds, the scanning operation starts.

If the Start key is not pressed within 60 seconds, the image scanner lamp turns off and the lamp carriage returns back to the home position.



FB Original detection sensor

1205

4. FB Scanning Mechanism

When the Start key is pressed, the FB read pulse motor activates to move the image scanner carriage in the scanning direction. After the top 4 mm of the original is skipped, the read signal turns ON and the original scanning operation starts.

Once the scanning is made for a specific given distance, the image scanner lamp turns off to end the scanning operation.

If the Book mode scanning is selected, the read signal is turned off for the length of 20mm in the center of the paper size set on the paper feed tray.

The image scanner carriage returns back to the home position after the scanning operation is finished.

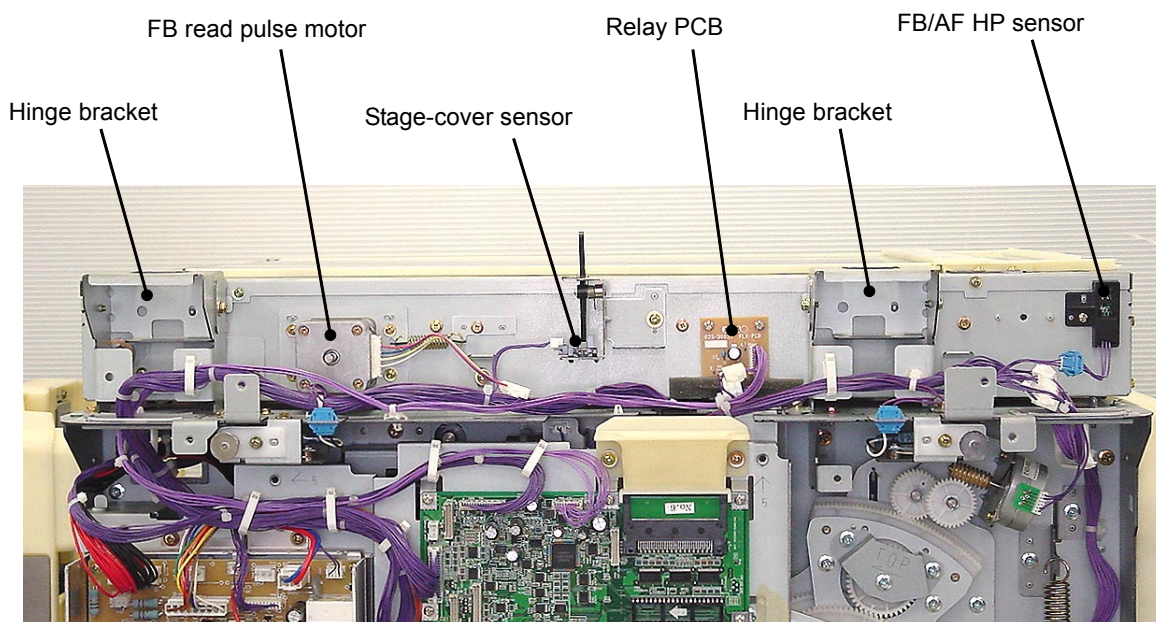
Disassembly

1. Removing the Scanner Unit

- (1) Switch off the power, and remove the following covers:
 - Stage cover
 - Scanner cover;paper feed
 - Scanner cover;paper ejection
 - Scanner cover;rear
 - Operation panel
- (2) Detach the stage-cover sensor by removing one screw (M4x8: 1pc) and disconnecting a connector.
- (3) Disconnect the FB/AF HP sensor connector.
- (4) Disconnect the relay PCB and the original detection sensor connectors.
- (5) Unplug the FB read pulse motor connector.
- (6) Remove the two hinge brackets by removing screws (M4x8: 2pcs each).
- (7) Remove screws (M4x8: 6pcs) securing the scanner bracket onto the machine, and lift and remove the scanner unit. **(This is a heavy precision component. Handle with care.)**

< NOTE >

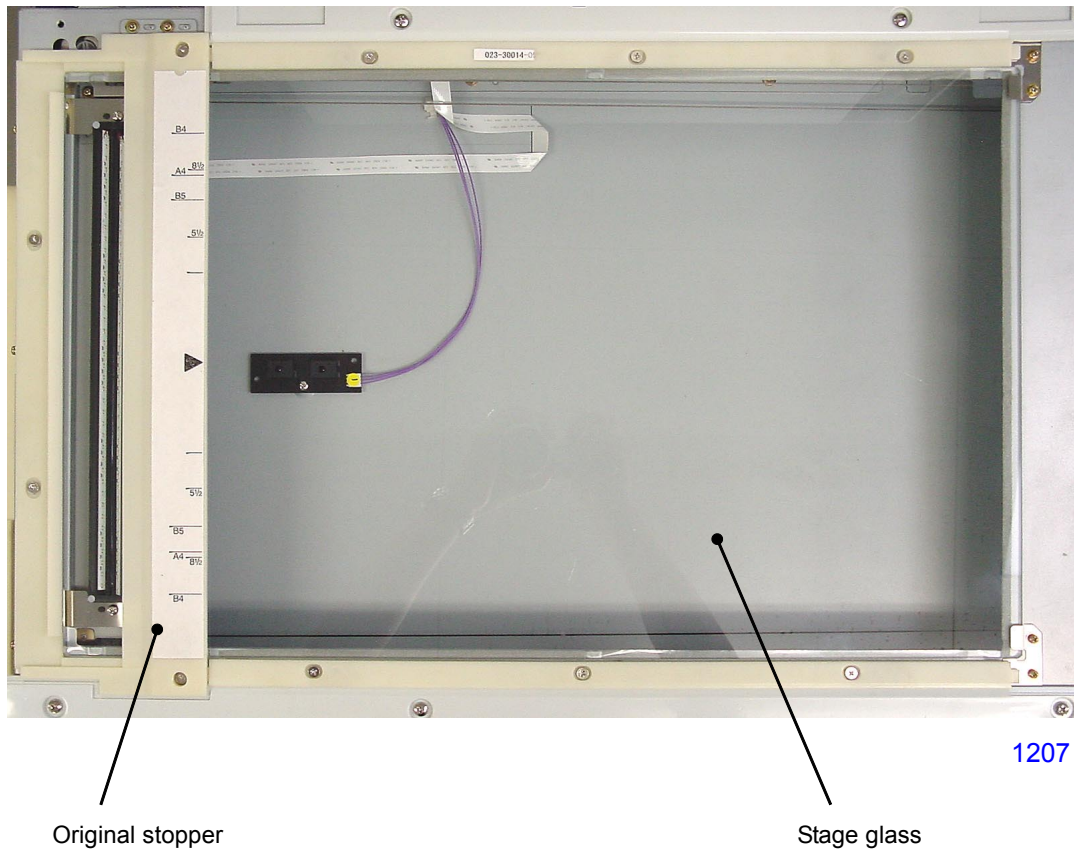
Unlike the RZ3 series, the RZ2 series do not require to perform the scanner setting by test mode. Install the unit on the machine and that completes the installation. (If the image scanner carriage is fixed at shipping position by a large screw, that screw must be removed.)



1206

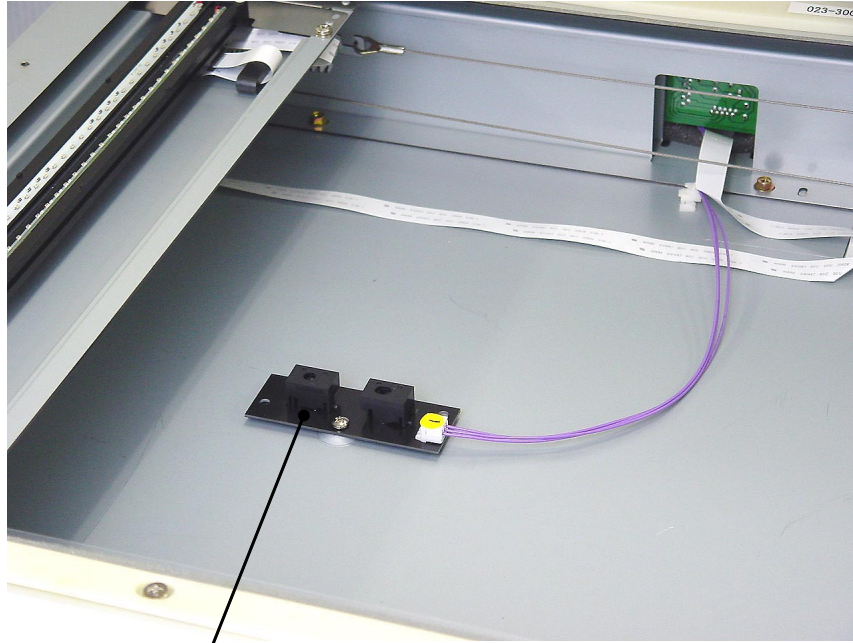
2. Removing the Stage Glass

- (1) Switch off the power, and remove the following covers:
 - Scanner cover;paper feed
 - Scanner cover;paper ejection
- (2) Remove one stepped screw and the three flat screws, and remove the original stopper.
- (3) Lift the stage glass to remove.



3. Removing the FB Original Detection Sensor

- (1) Switch off the machine power and remove the stage glass.
- (2) Disconnect the connector to the sensor, remove a screw (M3x6: 1pc) and detach the FB original detection sensor from the scanner unit.

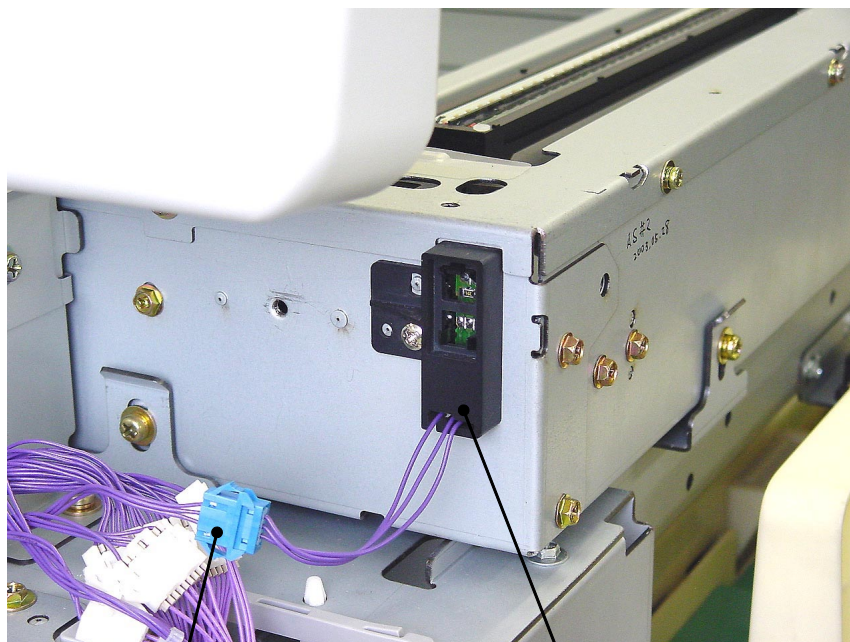


1208

FB original detection sensor

4. Removing the FB/AF HP Sensor

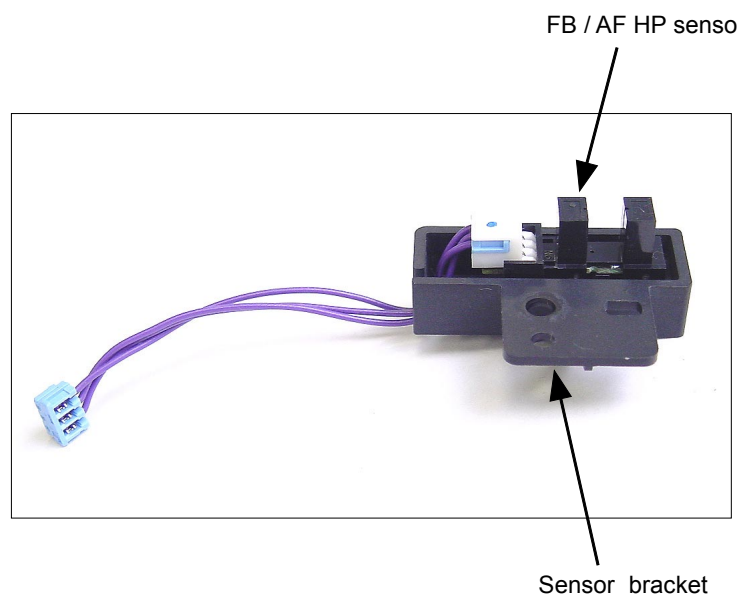
- (1) Switch off the machine power and remove the scanner cover;paper feed.
- (2) Disconnect the connector, remove screw (M3x6: 1pc) and remove the FB/AF HP sensor together with the sensor bracket.



1209

Connector

FB / AF HP sensor



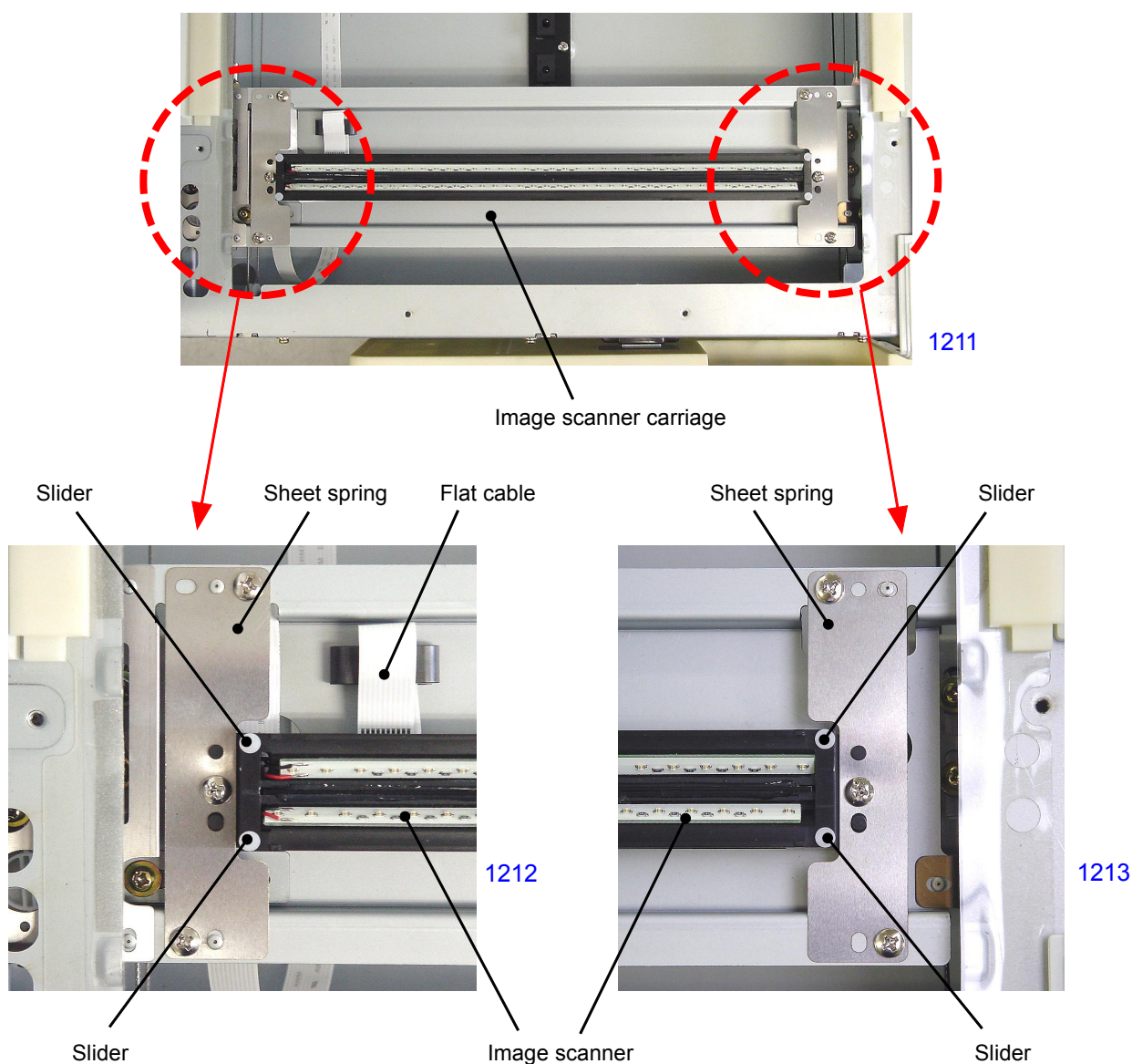
1210

5. Removing the Image Scanner

- (1) Switch off the machine power and remove the stage glass.
- (2) Remove the four sliders. (These are to be reused on the new image scanner).
 - * Be careful not to lose these four small parts.
- (3) Slowly slide the carriage to a position where all six screws on the sheet springs mounted on the ends of the image scanner carriage are visible.
- (4) Remove the two outer screws each (M3x6: 2pcs each) from the sheet springs on the left and right of the image scanner carriage. Disconnect the thin flat cable from the image sensor and remove the image sensor together with the sheet spring attached.
- (5) Remove one remaining screw (M3x6: 1pc each) from the center of each of the two sheet springs and detach the sheet springs from the image scanner.

< Precaution in Assembly >

After mounting the image scanner on the scanner unit, perform the image scanner position adjustment described on the last page of this chapter.

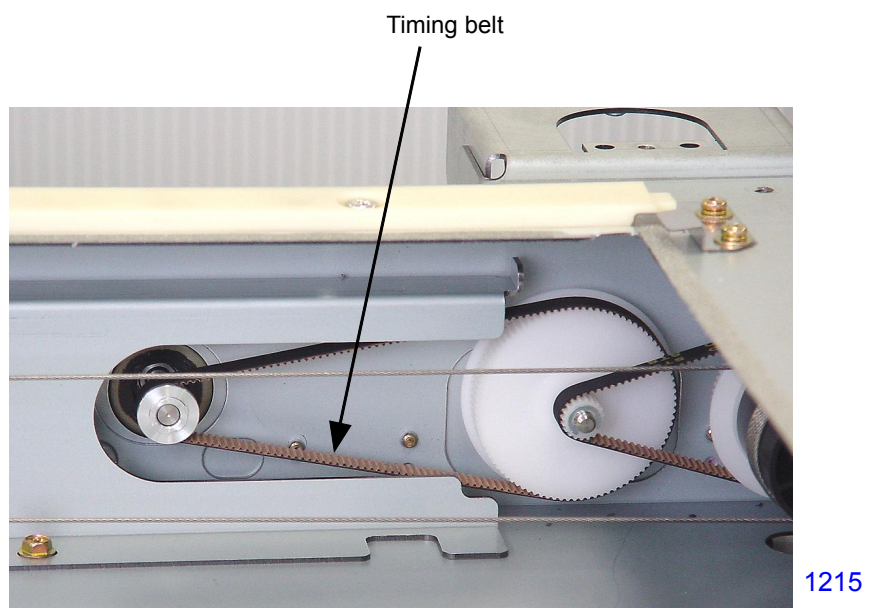
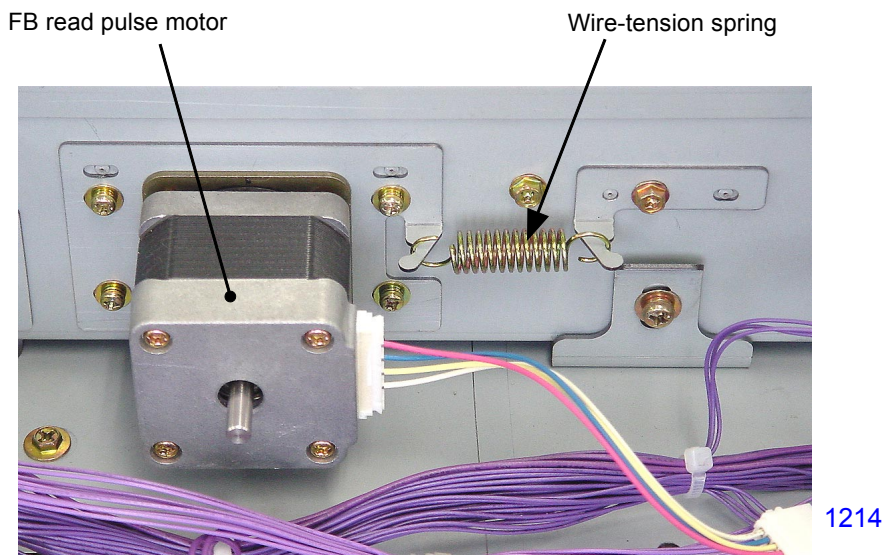


6. Removing the FB Read Pulse Motor

- (1) Switch off the machine power and remove the stage glass.
- (2) Remove the following covers:
 - Stage cover
 - Scanner cover;rear
- (3) Remove the wire-tension spring.
- (4) Remove securing screws (M3x6: 4pcs) from the FB read pulse motor bracket, detach the timing belt located inside the scanner unit, and remove the FB read pulse motor together with the motor bracket.

< Precaution on Assembly >

Screw on the FB read pulse motor bracket, with the motor attached, loosely on the scanner unit. Hook the wire-tension spring and then securely tighten the four screws of the motor bracket.



Adjustment

1. FB Read Pulse Motor Speed Adjustment (Image Elongation & Shrinkage in Scanning)

Checks and adjustment

- (1) Set B4-size papers on the paper feed tray and place Test Chart No.15 on the stage glass. Make a master and print.
- (2) Lay the printed paper on top of the test chart original to check that the image elongation and shrinkage, if exists, is within plus/minus 1.4% compared from the top to the 310mm line of the test chart original.
- (3) If the elongation or shrinkage is over the specified range, make an adjustment using Test Mode No.382 (FB Scanning Speed Adjustment).

Make sure that master-making elongation/shrinkage adjustment is already made prior to this scanning adjustment.

2. FB Scan Start Position Adjustment

Checks and adjustment

- (1) Set B4-size papers on the paper feed tray and place Test Chart No.15 on the stage glass. Make a master and print.
- (2) Check the prints and confirm that 4mm plus/minus 2mm of the scaled line on top of the test chart is erased on the prints (the scanning is omitted for this distance).
- (3) If the scanning start position is out of the specified range, make an adjustment using Test Mode No. 381 (FB Scan Start Position Adjustment).

3. FB Horizontal Scan Position Adjustment

Checks and adjustment

- (1) Set B4-size papers on the paper feed tray and place Test Chart No.15 on the stage glass. Make a master and print.
- (2) Look at the master made on the print drum. Confirm that all the “e” images are made on the right and left of the master on the print drum.
- (3) If any of the “e” images are omitted, make an adjustment using Test Mode No. 380 (FB Horizontal Scan Position Adjustment).

4. Image Scanner Position Adjustment

For this adjustment to be effective, the paper feeding area, especially the skew of the paper needs to be pre-adjusted. Also the three adjustments on the scanner unit described on the previous page, and the six adjustments on the master-making (described on Chapter 14) must also be pre-adjusted.

Checks and adjustment

- (1) Set B4-size papers on the paper-feed tray, use test chart No.15 to make a master, then print.
- (2) Compare the print against the original and confirm the direction and the amount if the image is offset.
- (3) If an adjustment is required, use test mode No.288 (Scanner HP & Service Positioning) to bring the image scanner to the service position. The service position is where the screws and adjusting cams are visible from the holes on the scanner unit.
- (4) Switch off the machine power and remove the following components.
 - Scanner cover;paper feed
 - Scanner cover;paper ejection
 - Original stopper
 - Stage glass

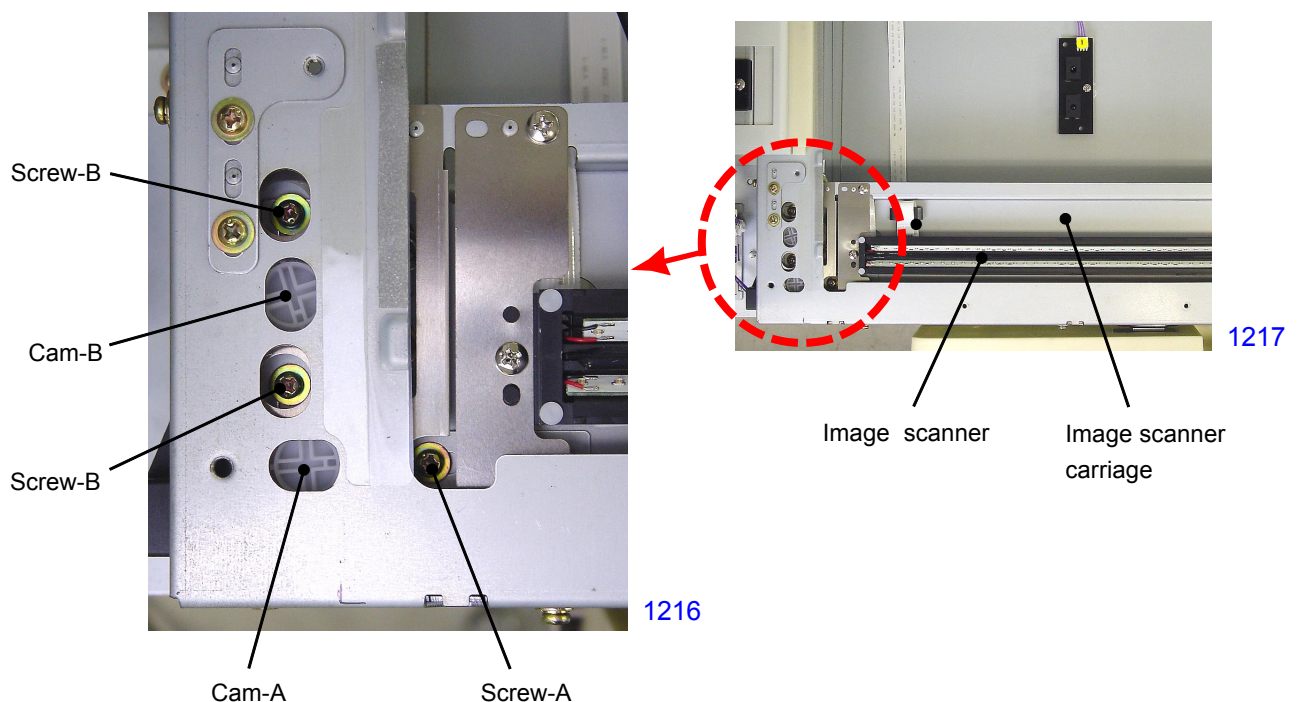
< If the image is horizontally shifted >

Loosen the screw-A (1pc) and make horizontal adjustment by rotating the cam-A. Rotating the cam in the clockwise direction by one click moves the image 0.17mm to the right.

< If the image is skewed >

Loosen the screws-B (2pcs) and make image-skew correction by rotating the cam-B. Rotating the cam in the clockwise direction by one click brings the image on the left-hand-side of the paper 0.047% down.

- (5) Mount the stage glass and original stopper back on the scanner unit. Make a master and confirm that the image on the print lines up with the original. Repeat the adjustment if required.



CHAPTER 13: AF SCANNING SECTION

Contents

MECHANISM

- 1. AF Original Set Mechanism 13-2
- 2. AF Original Scanning Mechanism (with Auto-Base Control) -- [Available only on RZ3 models] 13-4
- 3. AF Original Scanning Mechanism 13-5

DISASSEMBLY

- 1. Removing the Original Feed Roller Assembly 13-6
- 2. Removing the Pickup Roller 13-7
- 3. Removing the Original Stripper Roller 13-8
- 4. Removing the AF Original Detection Sensor, AF Read Sensor and AF Original Ejection Sensor 13-9
- 5. Removing the AF Read Pulse Motor 13-10
- 6. Removing the AF Registration Sensor 13-12
- 7. Removing the Registration Roller, Read Roller and Original Ejection Roller 13-13

ADJUSTMENT

- 1. AF Read Pulse Motor Speed Adjustment (Image elongation & shrinkage control in AF scanning) 13-16
- 2. AF Scan Start Position Adjustment 13-16
- 3. AF Horizontal Scan Position Adjustment 13-16
- 4. AF Read Sensor Sensitivity Adjustment 13-16

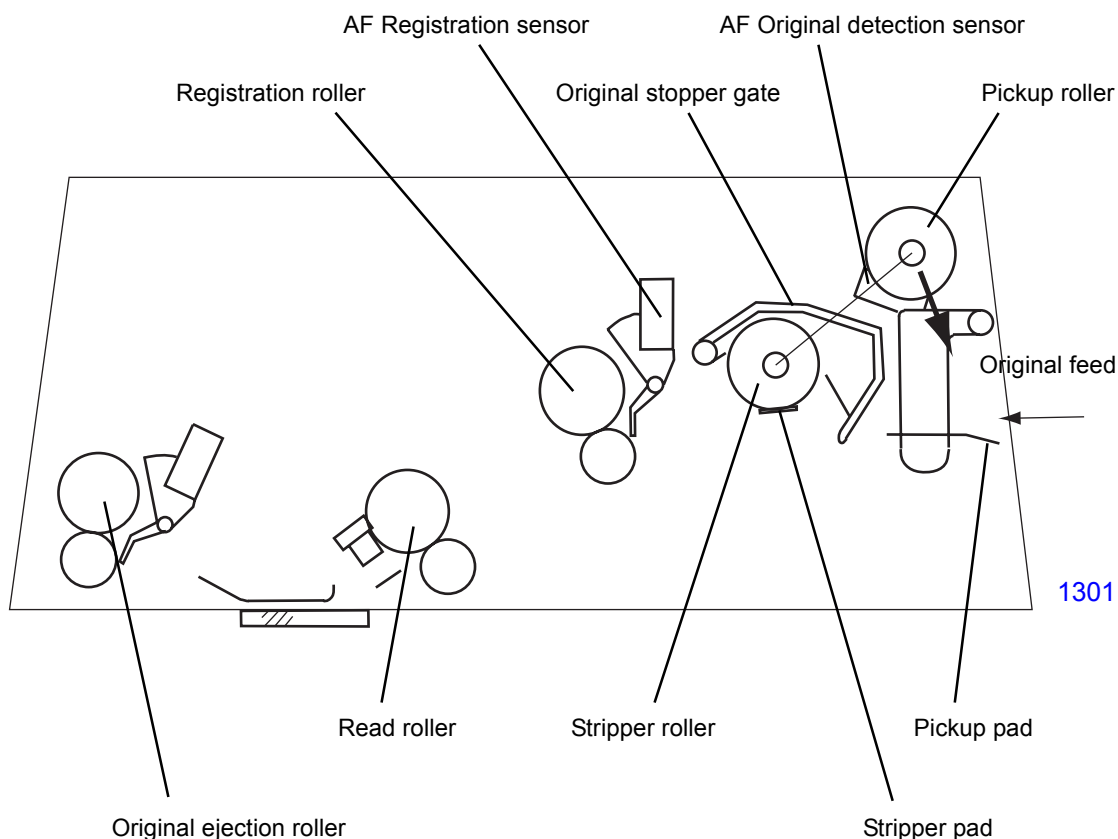
Mechanism

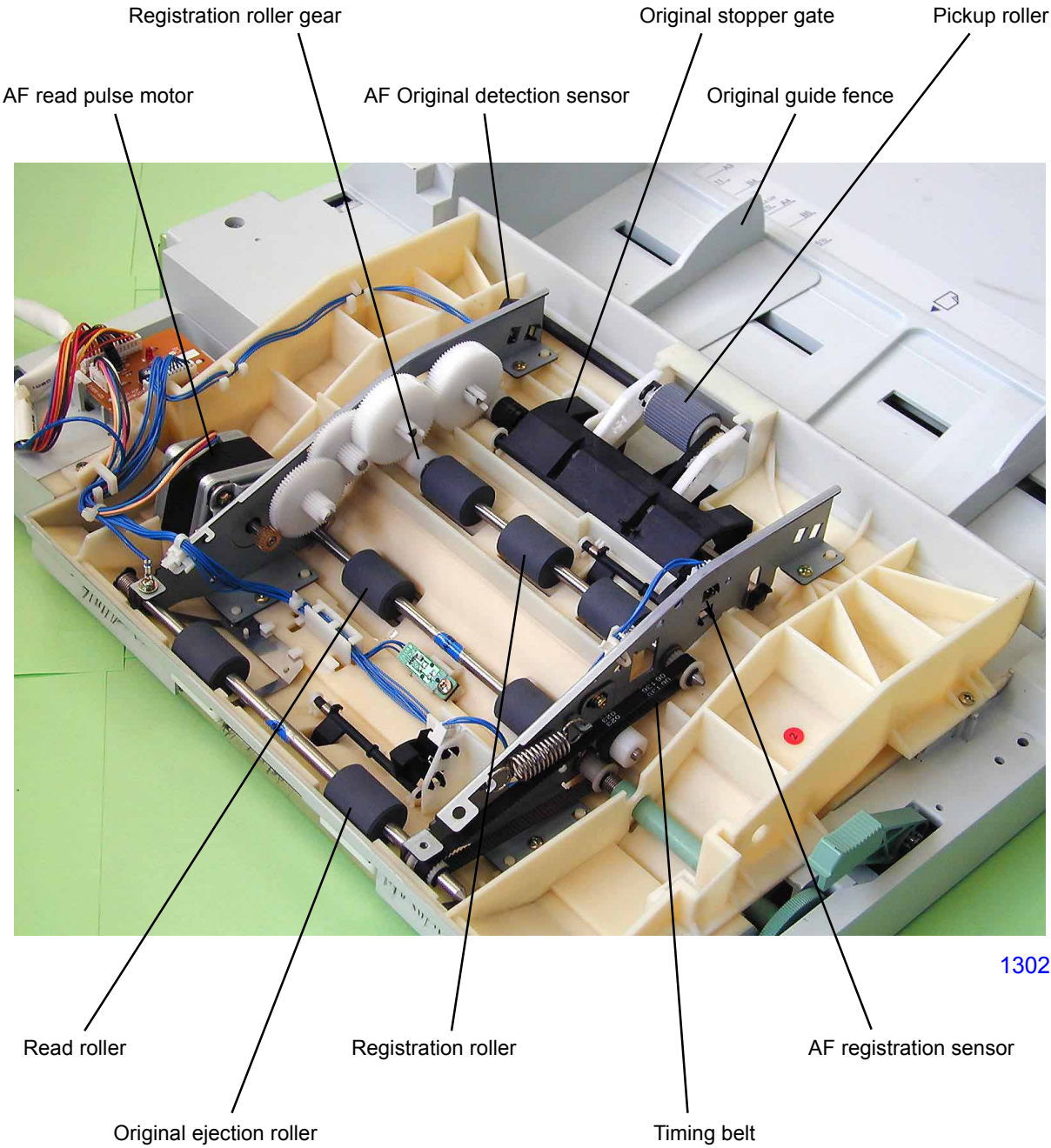
1. AF Original Set Mechanism

When the original are set along the original guide fences and the leading edge against the original stopper gate, the AF original detection sensor turns ON (receives light) and the Master/Print indication on the operation panel changes to "Master-Making". The thermal-pressure motor then turns ON to lower the TPH until the TPH pressure sensor goes ON.

After a preset interval, the AF read pulse motor activates in the clockwise direction to bring down the pickup roller and raises the original stopper gate up. (During this movement, the one-way clutch equipped between the registration roller gear and its shaft prevents the registration-roller from rotating.)

As the pickup roller comes down, the original stripper roller also comes down, and the both rollers rotates in the feed direction to advance the original. The leading edge of the original then hits the actuator of the AF registration sensor and switches the sensor ON (the actuator blocks the sensor) and continues to advance until it is stopped by the registration roller which is still not driven. The AF registration sensor, after turning ON, activates the AF read pulse motor in the counterclockwise direction to rotate the registration roller, read roller and original-ejection-gear to advance the original further forward. The feeding of the original ends when the original has moved a total of 100 mm from the original stopper gate.





1302

2. AF Original Scanning Mechanism (with Auto-Base Control) -- [Available only on RZ3 models]

This operation occurs only when the original scanning density is set to AUTO.

After the AF original setting operation is completed and if the Start key is pressed for the scanning operation, the scanner lamp turns ON.

The FB read pulse motor activates immediately to move the lamp carriage to the shading compensating position, and the shading compensation is done. Then the FB read pulse motor rotates the other way and brings the lamp carriage to the auto-base control scanning position (3mm + **A**mm in front of the normal AF scanning position) and stops.

At the same time, the AF read pulse motor rotates in the forward direction to bring the original 26.9mm from the point in which the AF read sensor turned ON and stops. The CCD reads the background color of the original. Then the FB read pulse motor moves the lamp carriage to the normal AF scanning position. The AF read pulse motor starts to feed the original through the AF unit and the read-signal goes ON to start the scanning. As the tail end of the original goes out of the original read sensor the read-signal goes OFF to end the scanning. (If the operator has chosen a print paper size smaller than the original, the read-signal turns OFF after scanning for that size.) After the read-signal turns OFF, the AF read pulse motor rotates at a fast speed to eject the original out. After a given period of time from the point in which the AF original ejection sensor detects the original gone out, the AF read pulse motor stops to end the AF original scanning movement.

The auto-base control function is inactive in the Photo, Duo and Dot-screening modes.

* Compensation value **A** = Test Mode No. 3071 (AF-ABC Mirror Position Adjustment).

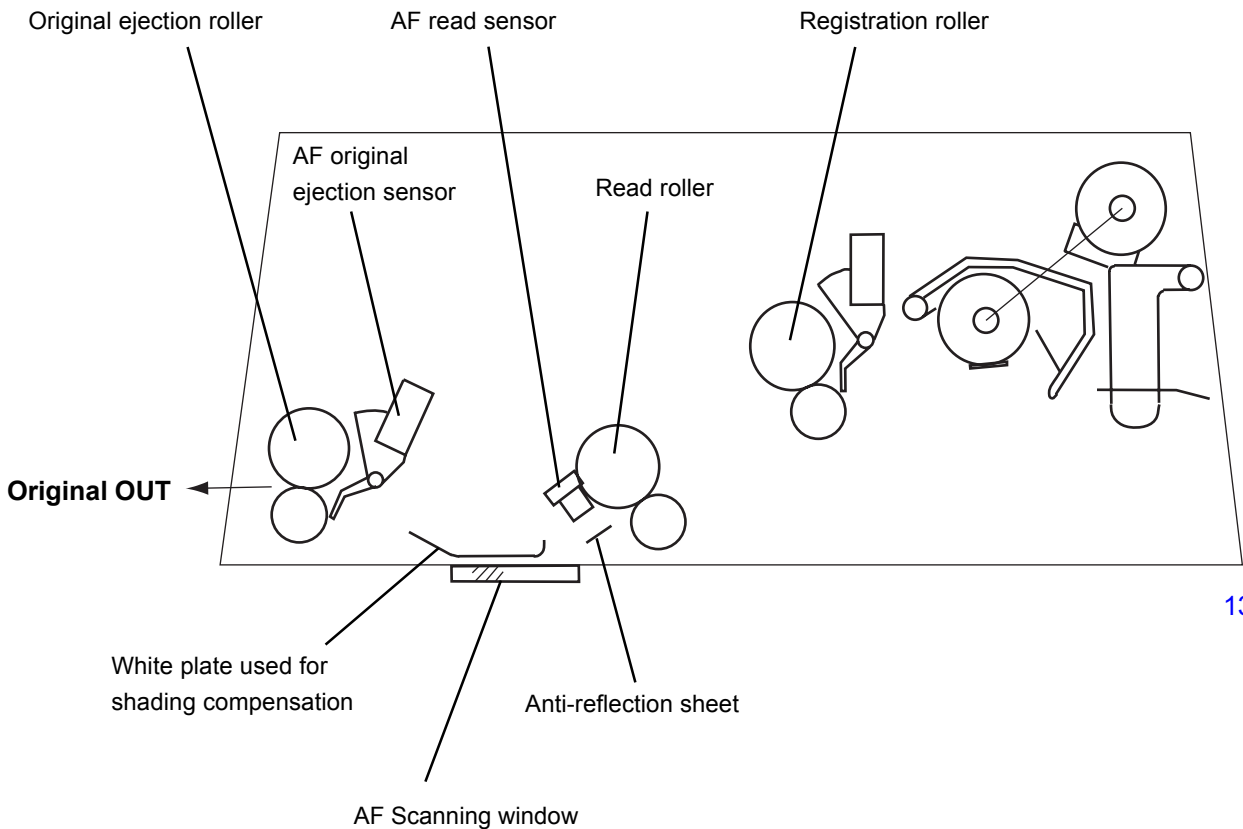
Note: ABC is an abbreviation for Auto Base Control.

3. AF Original Scanning Mechanism

After the AF original setting operation is completed and if the Start key is pressed for the scanning operation, the scanner lamp turns ON.

The FB read pulse motor activates immediately to move the lamp carriage to the shading compensating position, and the shading compensation is done. Then the FB read pulse motor rotates the other way and brings the lamp carriage to the AF scanning position and stops.

At the same time, the AF read pulse motor rotates in the forward direction to bring the original 29.9mm from the point in which the AF read sensor turned ON and stops. The AF read pulse motor starts to feed the original through the AF unit and the read-signal goes ON to start the scanning. As the tail end of the original goes out of the original read sensor the read-signal goes OFF to end the scanning. (If the operator has chosen a print paper size smaller than the original, the read-signal turns OFF after scanning for that size.) After the read-signal turns OFF, the AF read pulse motor rotates at a fast speed to eject the original out. After a given period of time from the point in which the AF original ejection sensor detects the original gone out, the AF read pulse motor stops to end the AF original scanning movement.



1303

Disassembly

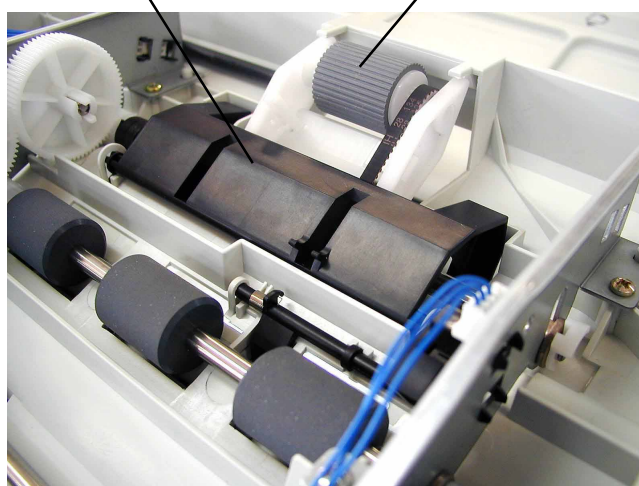
1. Removing the Original Feed Roller Assembly

- (1) Switch off the machine power and open the AF unit.
- (2) Remove screws (M3x10: 2pcs) and remove the AF cover.
- (3) Close the AF unit.
- (4) Remove the snap ring from the both ends of the original feed roller assembly and remove the metal bushings. Detach the original feed roller assembly by lifting the original stopper gate out of the way.



1304

Original stopper gate Original feed roller assembly



1305



1306

< Original Feed Roller Assembly >

Snap ring

Metal bushing

Metal bushing

Snap ring

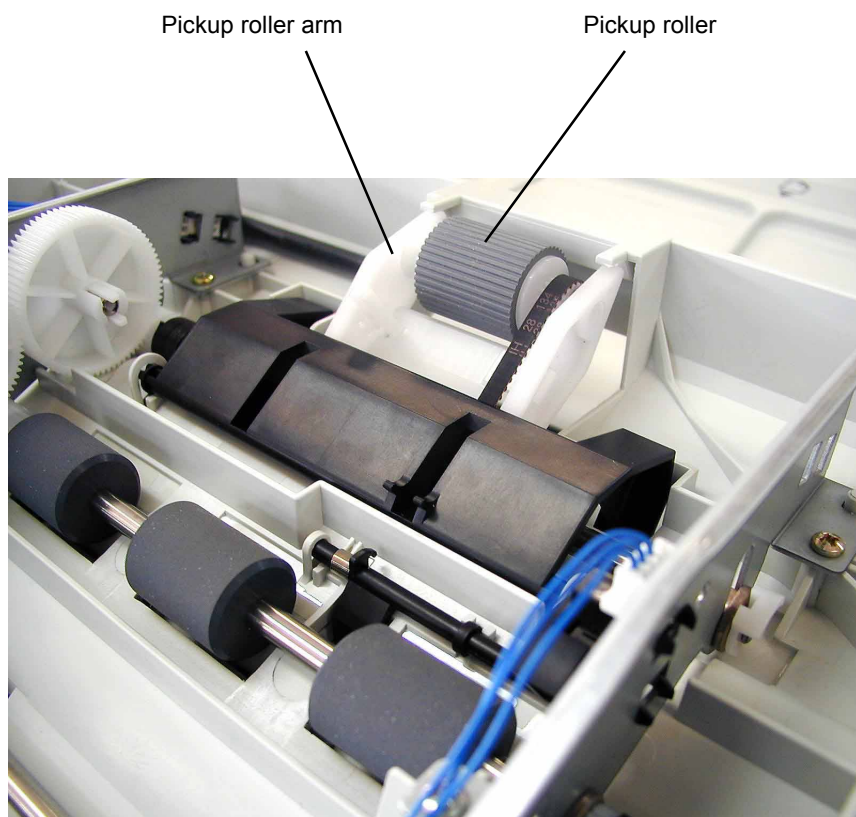
2. Removing the Pickup Roller

- (1) Switch off the machine power and open the AF unit.
- (2) Remove the AF cover and close the AF unit.
- (3) Detach the pickup roller by spreading out the tip of pickup-roller-arm by hand.

* Do not lose the plastic washer mounted next to the gear of the pickup roller.

< Precaution on Assembly >

Do not forget to mount the plastic gear next to the gear of the pickup roller.



1307

3. Removing the Original Stripper Roller

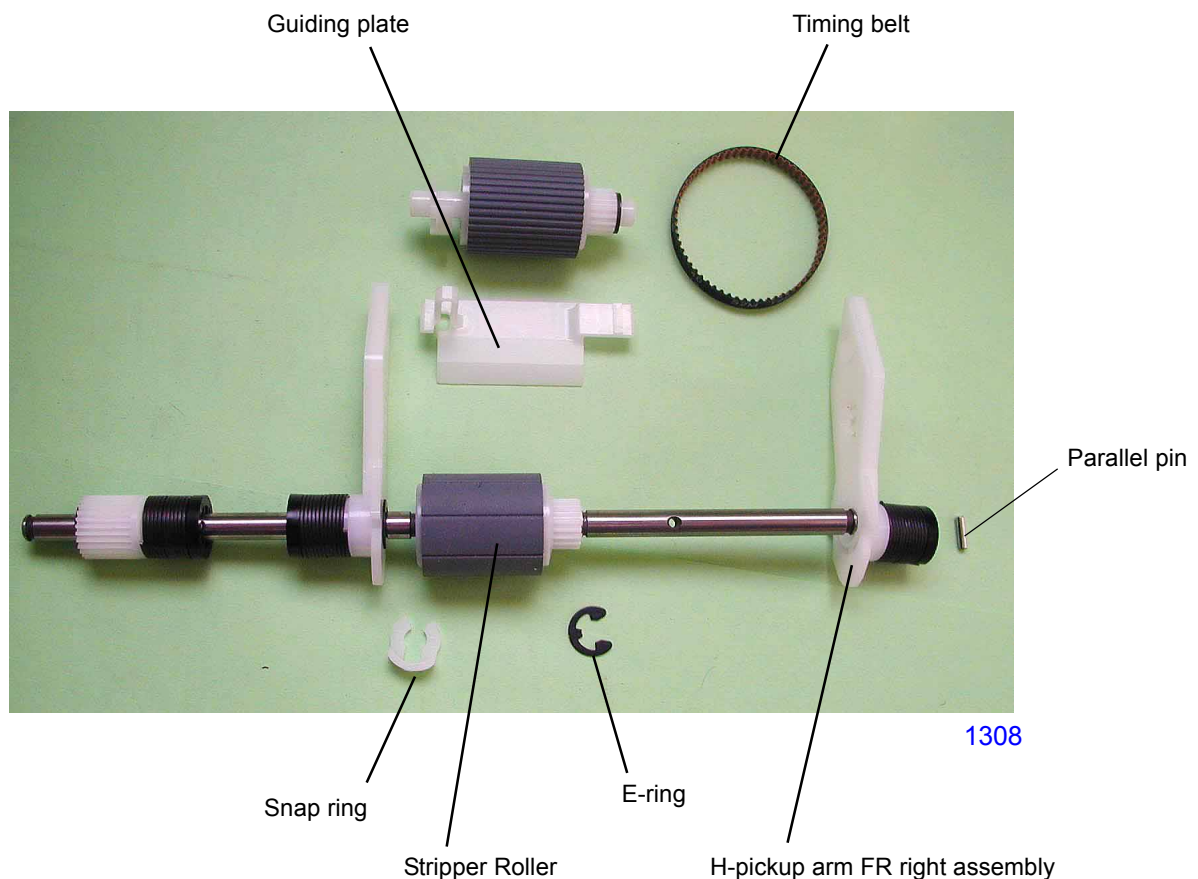
- (1) Switch off the machine power and open the AF unit.
 - (2) Remove the AF cover and close the AF unit.
 - (3) Remove the original feed roller assembly.
 - (4) Remove the pickup roller.
 - (5) Remove the guiding plate.
 - (6) Remove the snap ring from the left of the stripper roller and slide the stripper roller to the left. Then remove the E-ring on the right of the snap ring.
 - (7) Temporarily slide the H-pick arm FR right assembly to the left, and pull out the parallel pin.
 - (8) Remove the H-pick arm FR right assembly and the stripper roller from the shaft.
- * Be careful not to drop the washer mounted on the gear side of the stripper roller.

< Precaution in Assembly >

The original stripper roller must be installed with the correct orientation. Be sure to position the gear of the original stripper roller to the right as shown on the photograph below.

Install the washer on the gear side of the Original stripper roller.

When joining the parallel pin onto the H-pickup arm FR right assembly, be sure to insert it into the shallower groove of the H-pickup arm FR right assembly.



4. Removing the AF Original Detection Sensor, AF Read Sensor and AF Original Ejection Sensor

- (1) Switch off the machine power and open the AF unit.
- (2) Remove the AF cover and close the AF unit.

Removing the Original Detection Sensor

- (3) Disconnect the connector and release the actuator, and remove the AF Original detection sensor.

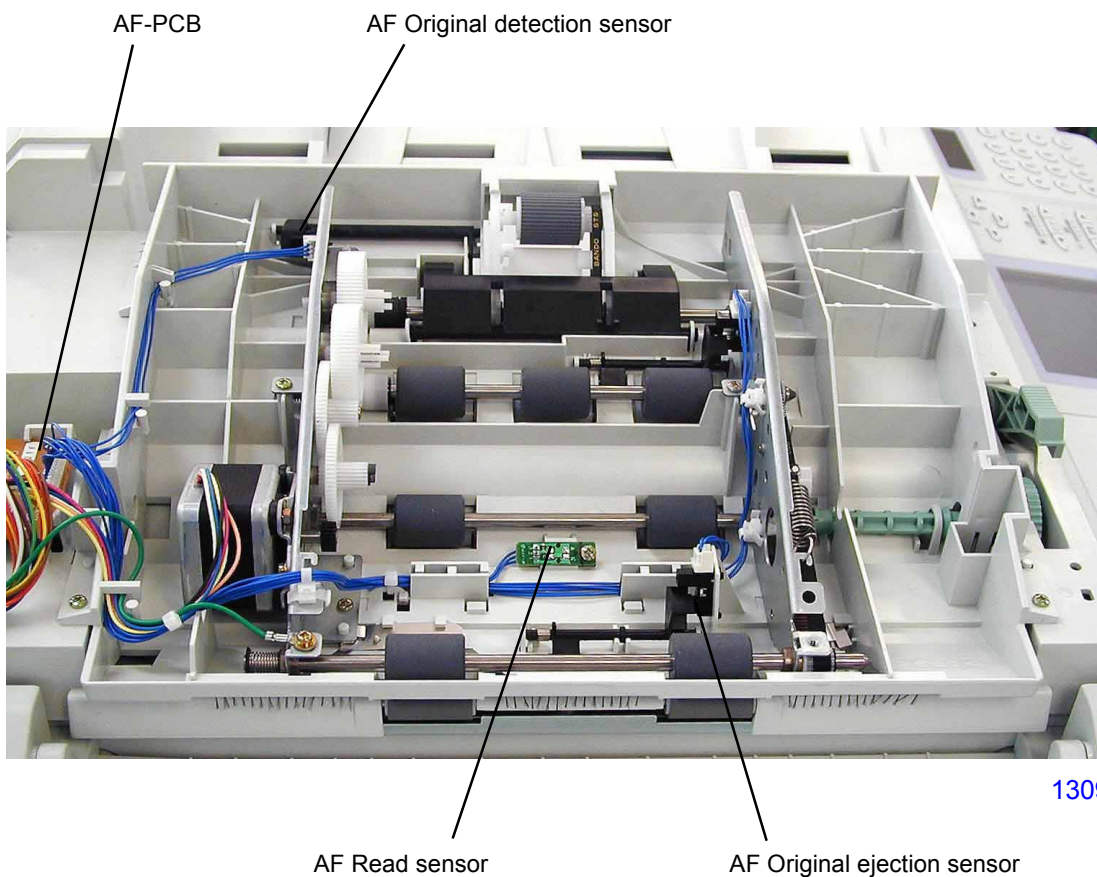
Removing the AF Read Sensor

- (3) Disconnect the connector to the sensor, remove a screw (M3x10: 1pc) and remove the AF read sensor.

* Following the reassembly, rotate the variable resistor VR1 on top of the AF-PCB to adjust LED 1 to the maximum brightness.

Removing the AF Original Ejection Sensor

- (3) Disconnect the connector to the sensor, release the actuator and remove the AF Original ejection sensor.

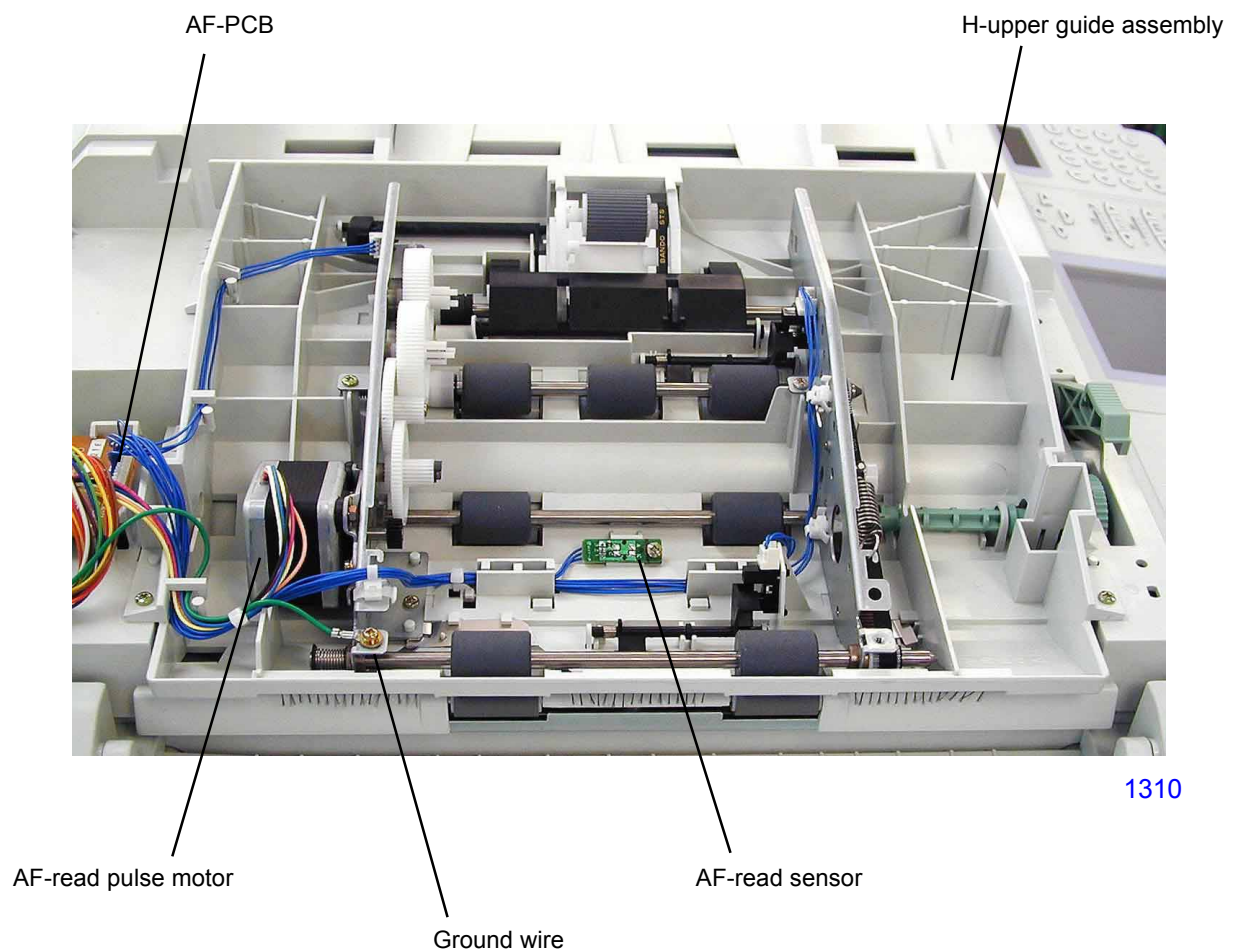


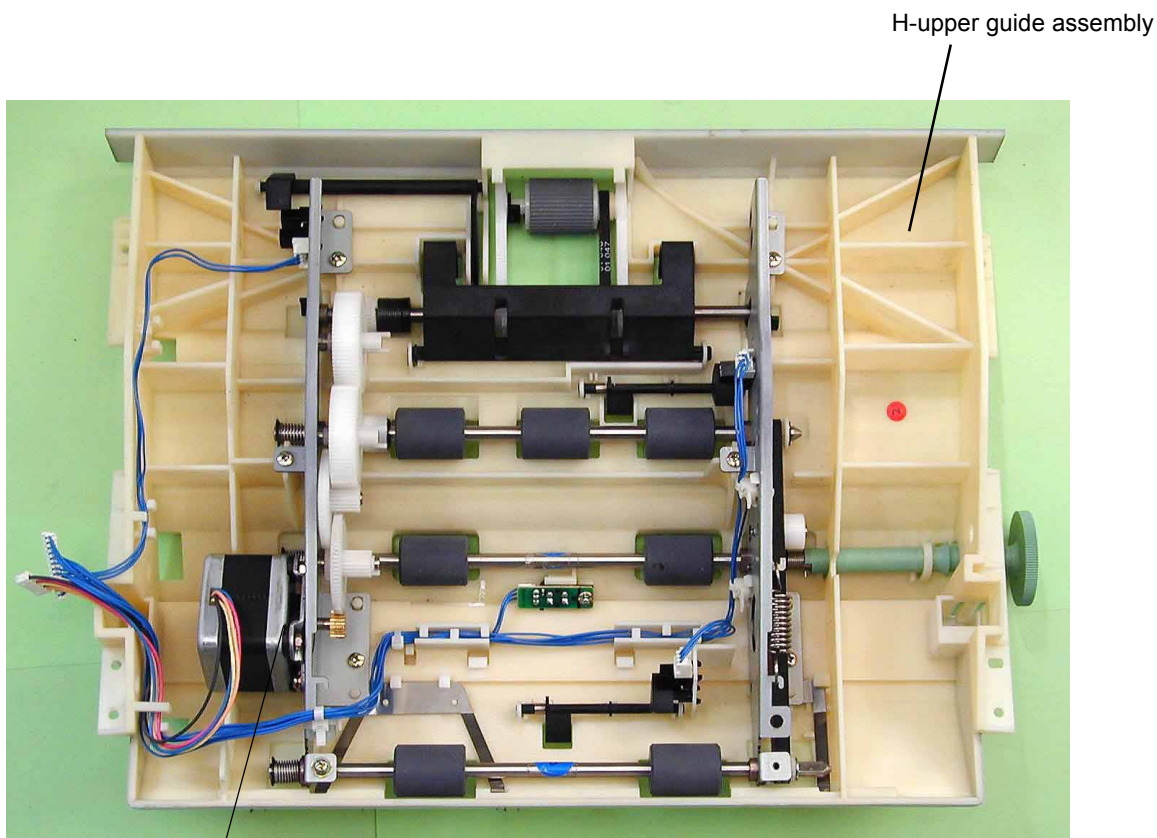
5. Removing the AF Read Pulse Motor

- (1) Switch off the machine power and open the AF unit.
- (2) Remove the AF cover and close the AF unit.
- (3) Disconnect the AF-PCB connectors CN1 and CN3. Then remove the ground wire by removing a screw (M3x6: 1pc).
- * Be careful not to drop the lock washer located under the ground wire.
- (4) Remove screws (M3x6: 4pcs) and remove the H-upper guide assembly.
- (5) Remove screws (M3x6: 2pcs) and remove the AF read pulse motor.

< Precautions on Reassembly >

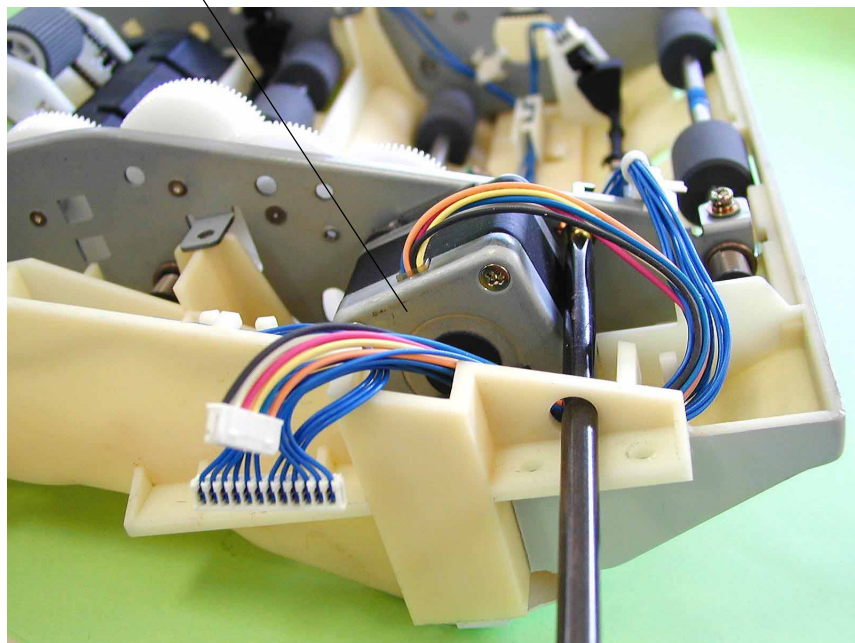
- When installing the ground wire, do not forget to install the lock washer under the ground wire.
- Following the install of H-upper guide assembly, adjust the AF read sensor (rotate the variable resistor VR1 on top of the AF-PCB to adjust LED 1 to the maximum brightness).





1311

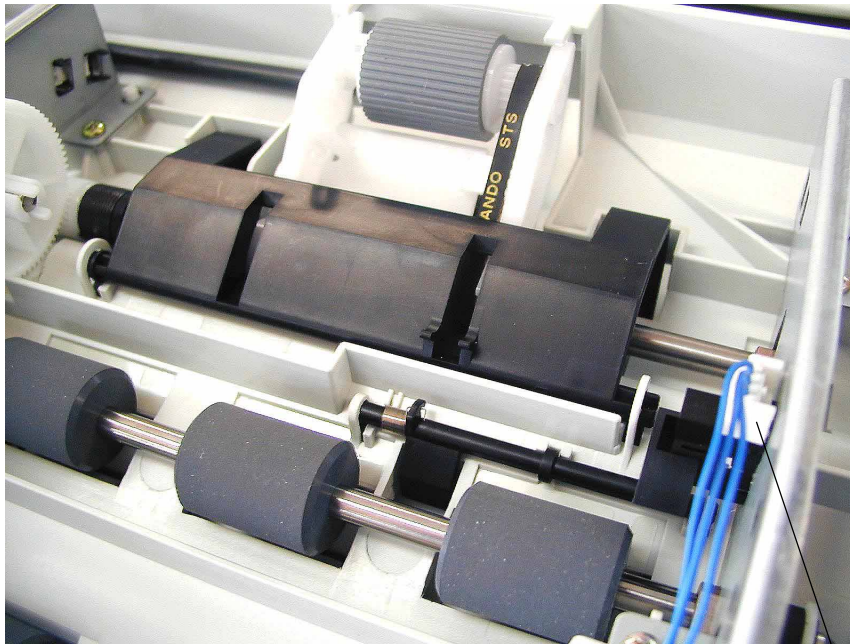
AF read pulse motor



1312

6. Removing the AF Registration Sensor

- (1) Switch off the machine power and open the AF unit.
- (2) Remove the AF cover and close the AF unit.
- (3) Disconnect the connector, move the actuator to the left while lifting it up and then remove the AF registration sensor.



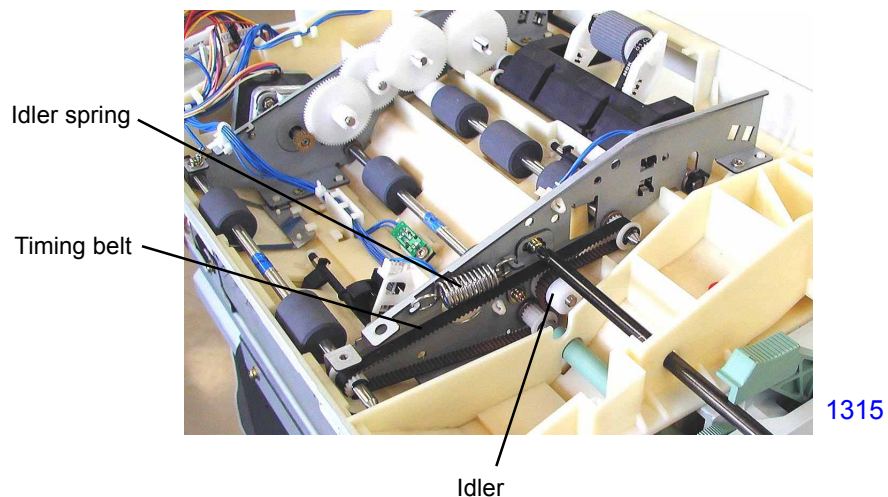
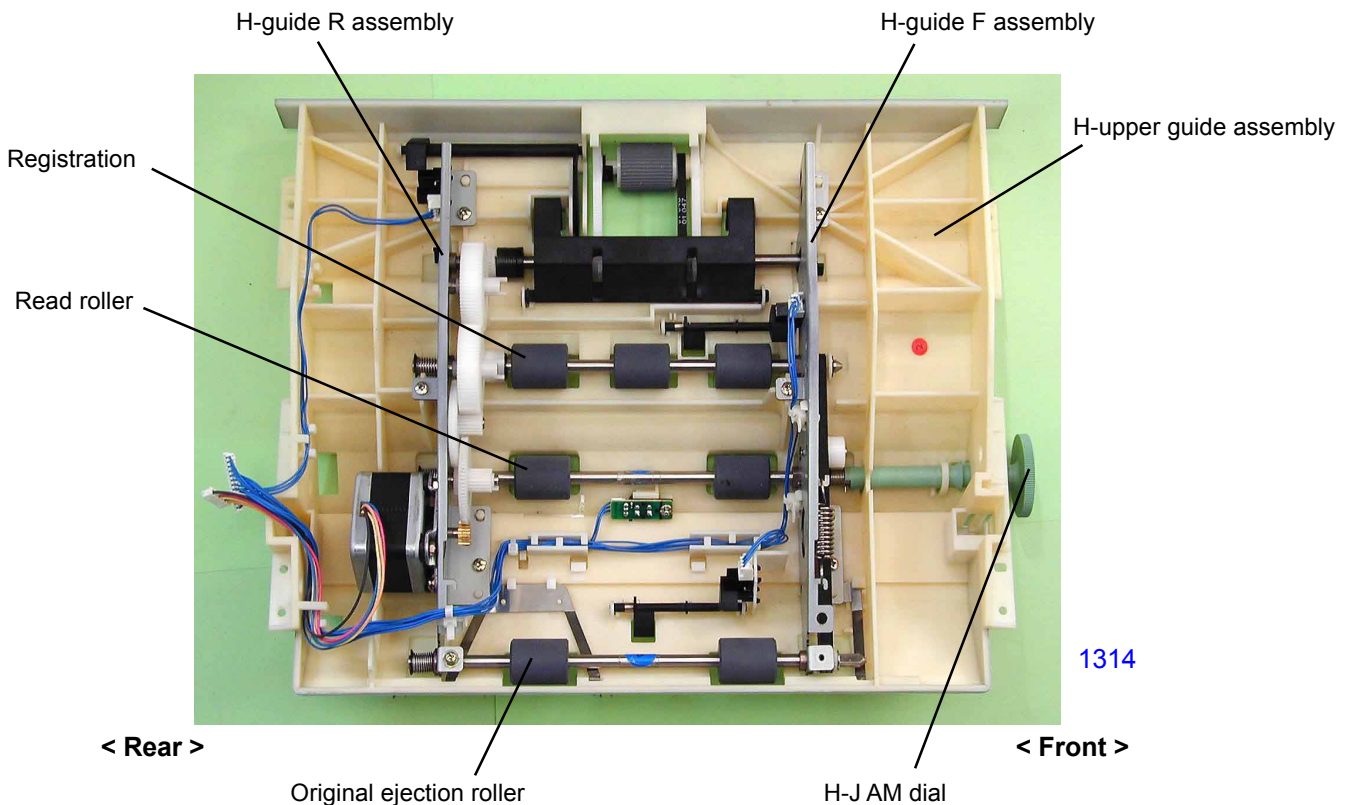
1313

AF registration sensor

7. Removing the Registration Roller, Read Roller and Original Ejection Roller

- (1) Switch off the machine power and open the AF unit.
- (2) Remove the AF cover and close the AF unit.
- (3) Disconnect the AF-PCB connectors CN1 and CN3. Then remove the ground wire by removing a screw (M3x6: 1pc).
- * Be careful not to drop the lock washer located under the ground wire.
- (4) Remove screws (M3x6: 4pcs) and remove the H-upper guide assembly.
- (5) Pull out the H-JAM dial by lifting it up towards the left.
- (6) Remove the idler spring and loosen the two idler screws to loosen the timing belt tension.
- (7) Remove the H-guide F & R assemblies by removing screws (M3x10: 3pcs each).

- Continues on next page -

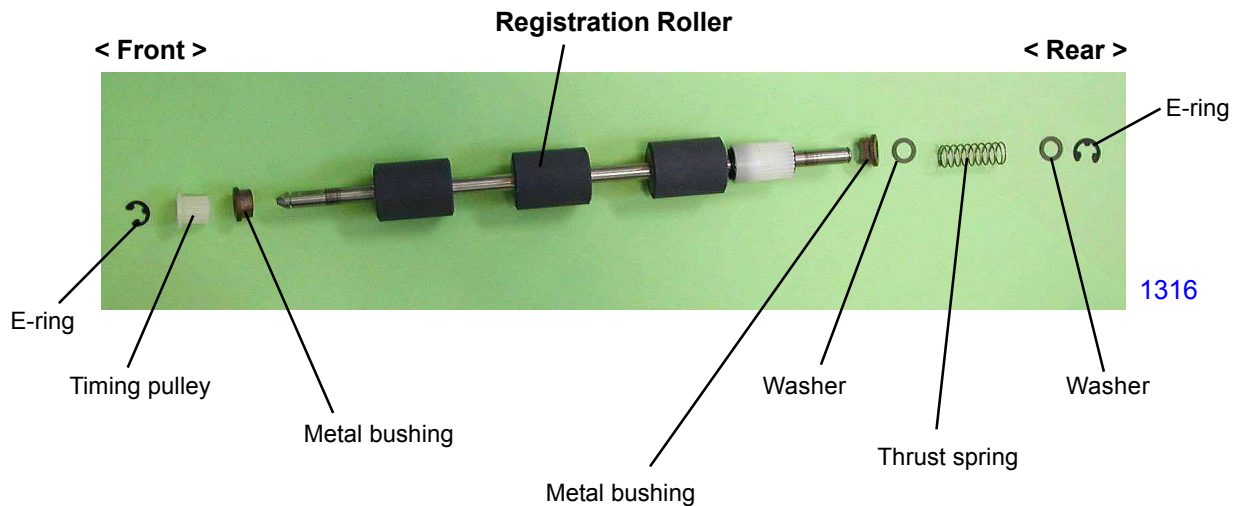


Removing the registration roller

(8) Remove the E-rings, timing pulley, washers, thrust spring and metal bushings off the registration roller.

* Be careful that the washer and the thrust spring may fly out of the roller shaft when the E-ring is removed.

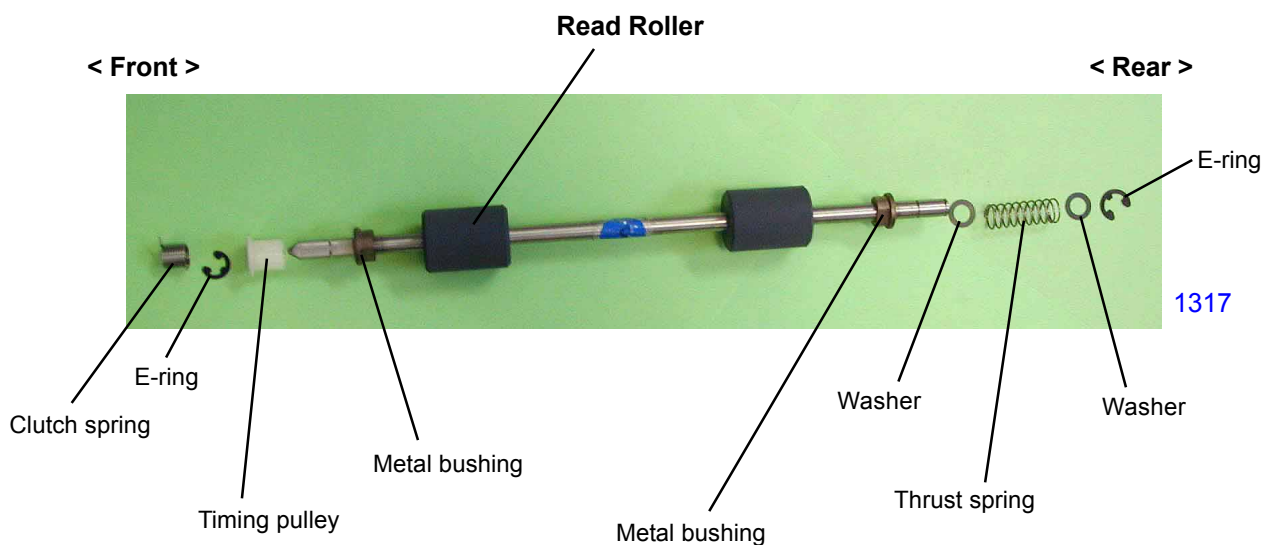
- Refer to the precaution in reassembly at the bottom of next page -

**Removing the read roller**

(8) Remove the clutch spring, E-ring, timing pulley and metal bushing from the front side of the read roller. Then remove the E-ring, washers, thrust spring, washer and metal bushing from the rear side of the roller.

* Be careful that the washer and the thrust spring may fly out of the roller shaft when the E-ring is removed.

- Refer to the precaution in reassembly at the bottom of next page -

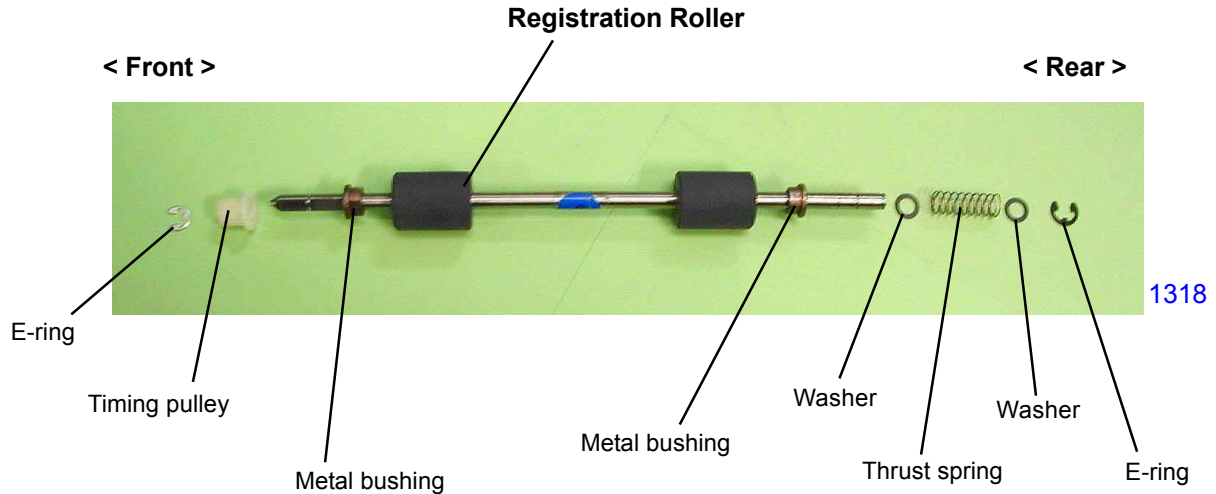


Removing the original ejection roller

- (8) Remove the E-ring, timing pulley and metal bushing from the front side of the original ejection roller. Then, remove the E-ring, washers, thrust spring and metal bushing from the rear side of the roller.

* Be careful that the washer and the thrust spring may fly out of the roller shaft when the E-ring is removed.

- Refer to the precaution in reassembly at the bottom of this page -

**< Precautions in Reassembly >****[for the Registration Roller, Read Roller and Original Ejection Roller]**

- Install the washers on both ends of the thrust spring on the rear side of each roller and then hook the E-ring.
- Make sure that the flanges on the timing pulley faces the correct direction on each roller.

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Adjustment

1. AF Read Pulse Motor Speed Adjustment (Image elongation & shrinkage control in AF scanning)

Checks and adjustment

- (1) Set A3-size paper in the paper-feeding tray, place Test Chart No.11 on the AF unit, make a master and print.
- (2) Lay the print on top of the original to confirm that the image elongation or shrinkage is within plus or minus 1.4% from the top to the 350mm line of the test chart image.
- (3) If the image elongation or shrinkage is out of this specification, make an adjustment using Test Mode No. 3074 (AF Scanning Speed Adjustment).

* Prior to the adjustment, finish the image elongation and shrinkage in master-making first.

2. AF Scan Start Position Adjustment

Checks and adjustment

- (1) Set A3-size paper on the paper-feeding tray, place Test Chart No.11 on the AF unit, make a master and print.
- (2) Check the prints and confirm that 5mm (plus or minus 2mm) of the top scan skip check graduations is skipped.
- (3) If the scan start position is out of the specified parameter, make an adjustment using Test Mode No. 3073 (AF Scan Start Position Adjustment).

3. AF Horizontal Scan Position Adjustment

Checks and adjustment

- (1) Set A3-size paper in the paper-feeding tray. Using the AF unit, place Test Chart No.14 on the AF unit and make a master.
- (2) Check the master created on the print drum. Confirm that none of the "e" images on the left and right of the original is not omitted.
- (3) If any "e" image is omitted, make an adjustment using Test Mode No.3072 (AF Horizontal Scan Position Adjustment).

4. AF Read Sensor Sensitivity Adjustment

Checks and adjustment

- (1) Switch off the machine power and open the AF unit.
- (2) Remove the AF cover and close the AF unit.
- (3) Turn the variable resistor VR-1 on top of the AF-PCB to adjust LED1 to the maximum brightness.

Checks after adjustment

- Check that LED1 on top of the AF-PCB goes off when an original (normal white paper) is detected by the AF read sensor.

CHAPTER 14: MASTER MAKING SECTION

Contents

MECHANISM

1. Master Making Unit Components	14-2
2. Set Detection Mechanism	14-3
3-1. Master Cutting Mechanism (Rotary cutter : A3 machine)	14-4
3-2. Master Cutting Mechanism (Shuttle cutter : excluding A3 machine)	14-5
4. TPH (Thermal Print Head) Elevation Mechanism	14-6
5. Master Set Mechanism	14-7
6. Master Making Movement	14-8

DISASSEMBLY

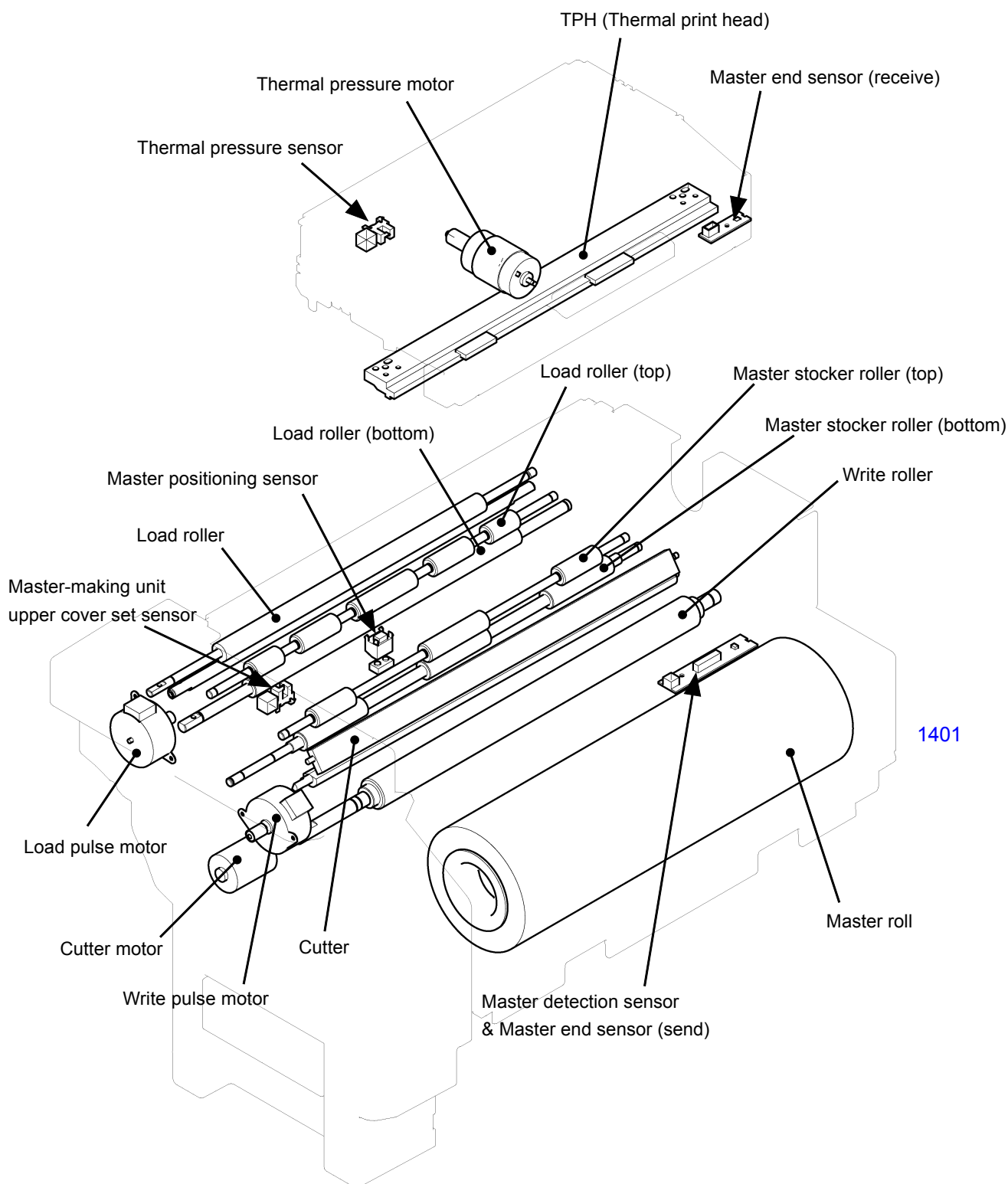
1. Removing the Master Making U Lock Sensor	14-9
2. Removing the Print Drum, Master Making U Release Button, Lock Solenoid, and Safety Switch	14-10
3. Removing the Print Thermal Head Assembly	14-12
4. Removing the Thermal Pressure Motor Assembly	14-14
5. Removing the Master End Sensor (receive) Assembly	14-16
6. Removing the Master Detection Sensor and Master End Sensor (send) Assembly	14-17
7. Removing the Antenna PCB	14-20
8. Removing the Write Pulse Motor Assembly	14-21
9. Removing the Master Guide Gate (excluding A3/Ledger machine)	14-22
10. Removing the Write Roller	14-23
11. Removing the Load Pulse Motor Assembly	14-24
12. Removing the Cutter Cover Assembly (A3/Ledger machines only)	14-25
13. Removing the Cutter Cover Assembly (excluding A3/Ledger machines)	14-26
14. Removing the Clamping Guide Roller	14-27
15. Removing the Cutter Guide Assembly	14-28
16-1. Removing the Cutter Unit (Rotary cutter : A3/Ledger machines only)	14-29
16-2. Removing the Cutter Unit (Shuttle cutter : excluding A3/Ledger machines)	14-30
17. Removing the Load Roller (bottom)	14-31
18. Removing the Master Making Unit	14-32
19. Removing the Master Stocker Roller (bottom)	14-35

ADJUSTMENT

1. Thermal Power of Thermal Print Head	14-37
2. Master Clamp Range Adjustment	14-37
3. Write Start Position Adjustment	14-37
4. Master cut length adjustment	14-38
5. Master making image Elongation and Shrinkage adjustment	14-38
6. Master making length adjustment	14-38
7. Master Positioning Sensor sensitivity adjustment	14-39

Mechanism

1. Master Making Unit Components



1401

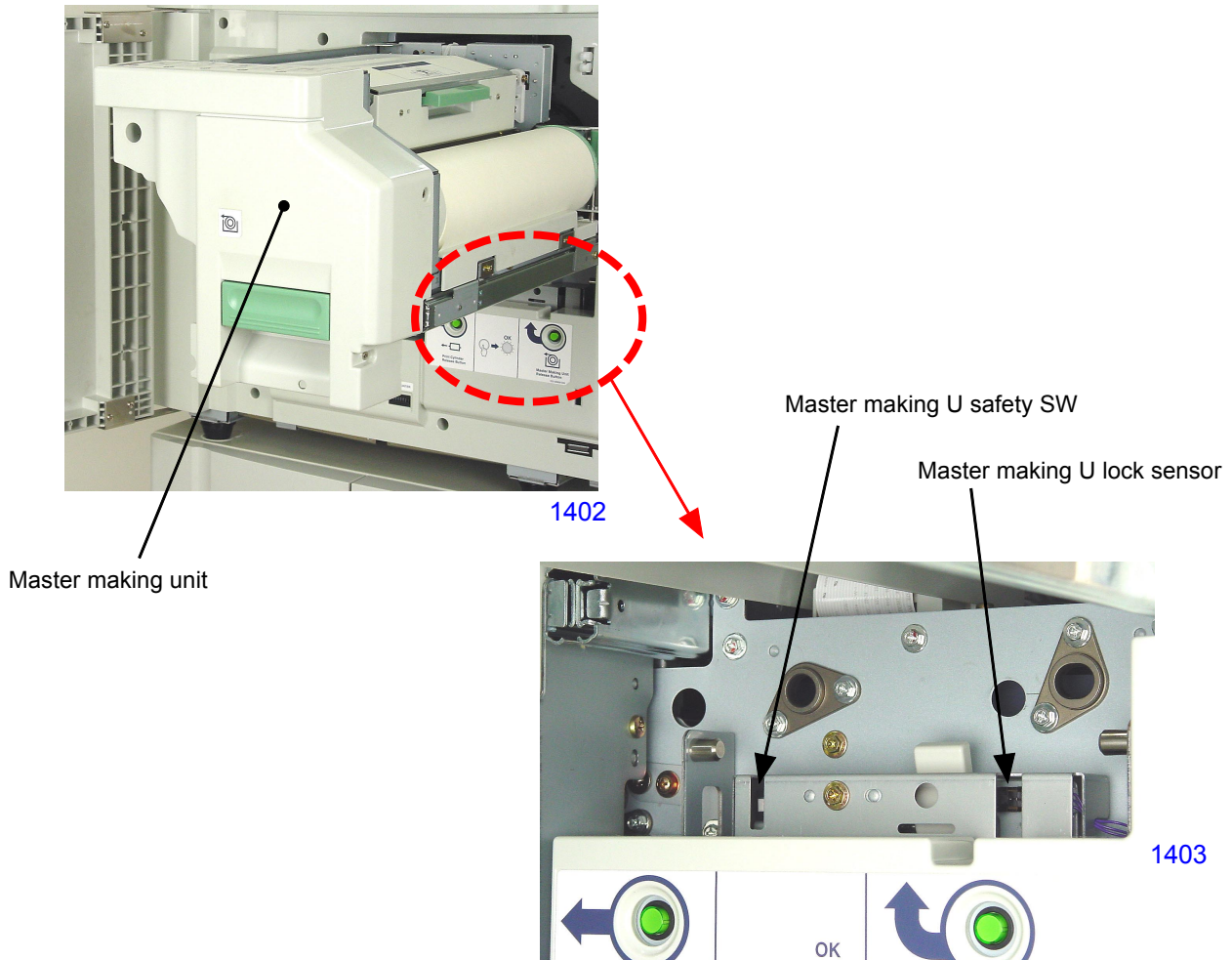
2. Set Detection Mechanism

Master making unit set detection mechanism

As flatbed section cannot be opened or closed, the unit has a mechanism in which the master making unit can be pulled out.

The pulling out and insertion of the master making unit are conducted at print drum position-B stop position. The master making U safety switch and the master making U lock sensor confirm that the master making unit is set.

When the master making U safety switch turns OFF, the main motor, clamp motor, master removal compression motor and master removal transport motor are electrically designed not to activate.



The master making unit upper cover detection mechanism

The master making unit upper cover set sensor confirms that the master making unit upper cover is set, and the master setting operation is performed once the cover is set.

Master end detection

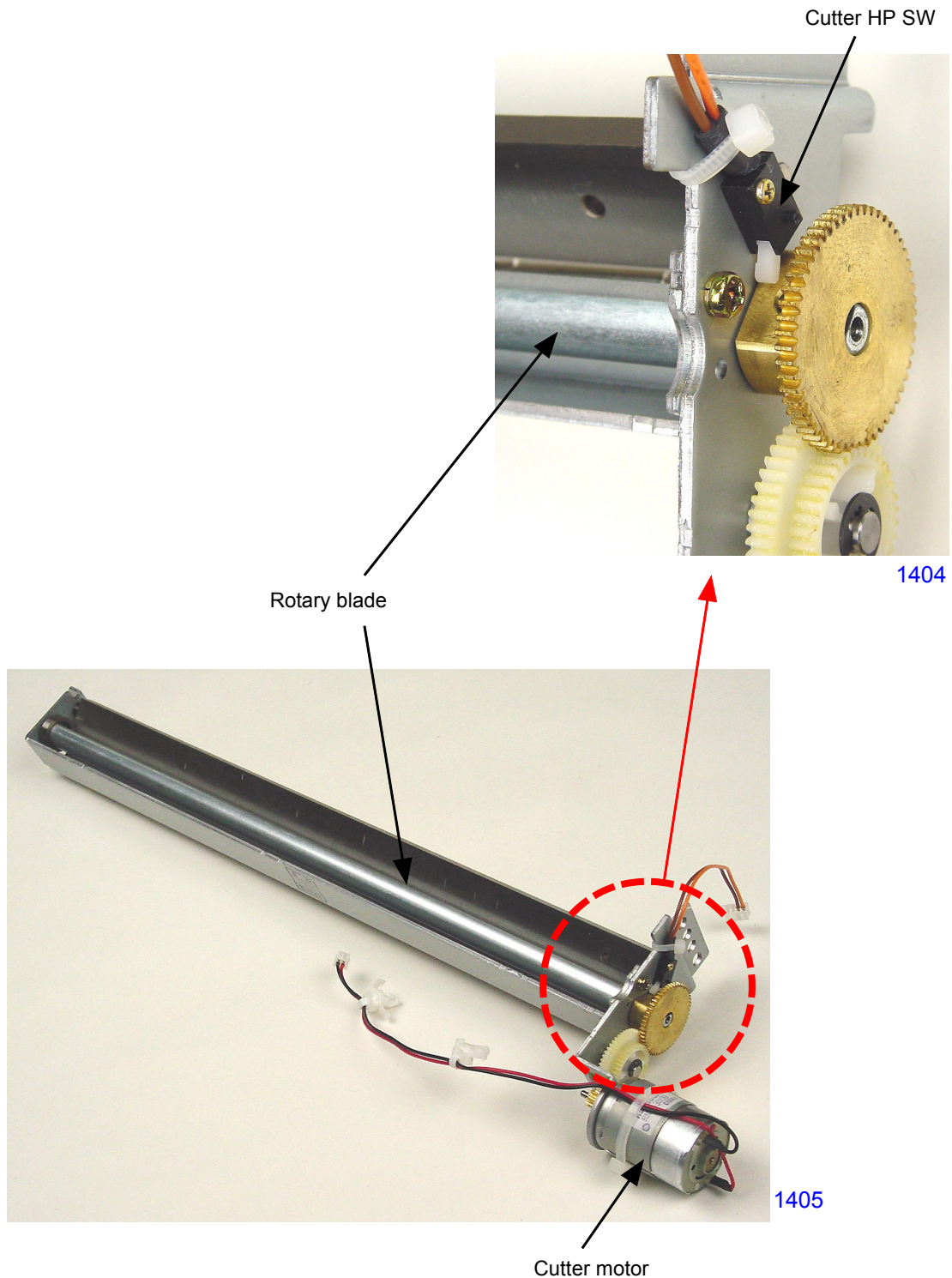
The end of the master roller is confirmed by the master end sensor detecting the black end mark attached on the tail end of the master material on the master roll. The master end sensor checks every 10 ms while the master is being transported, and the master roll LED on the operation panel illuminates when the end mark is detected twice in succession.

3-1. Master Cutting Mechanism (Rotary cutter : A3 machine)

The master is cut by the rotary cutter of the cutter unit, which is rotated by the cutter motor. The cutter motor rotates in one direction.

The cutter HP SW confirms the home position of the rotary cutter. The cutter is at the home position when the switch is not pressed.

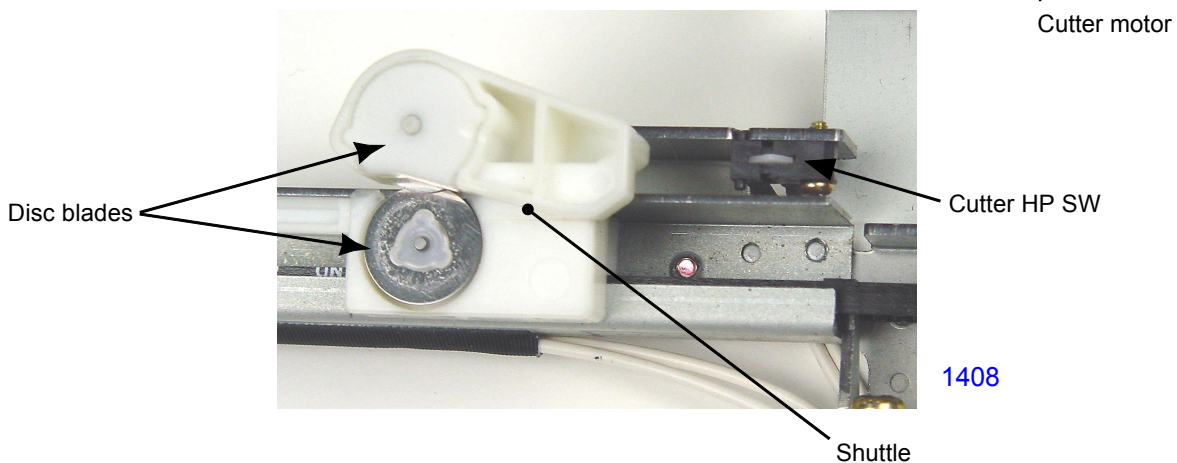
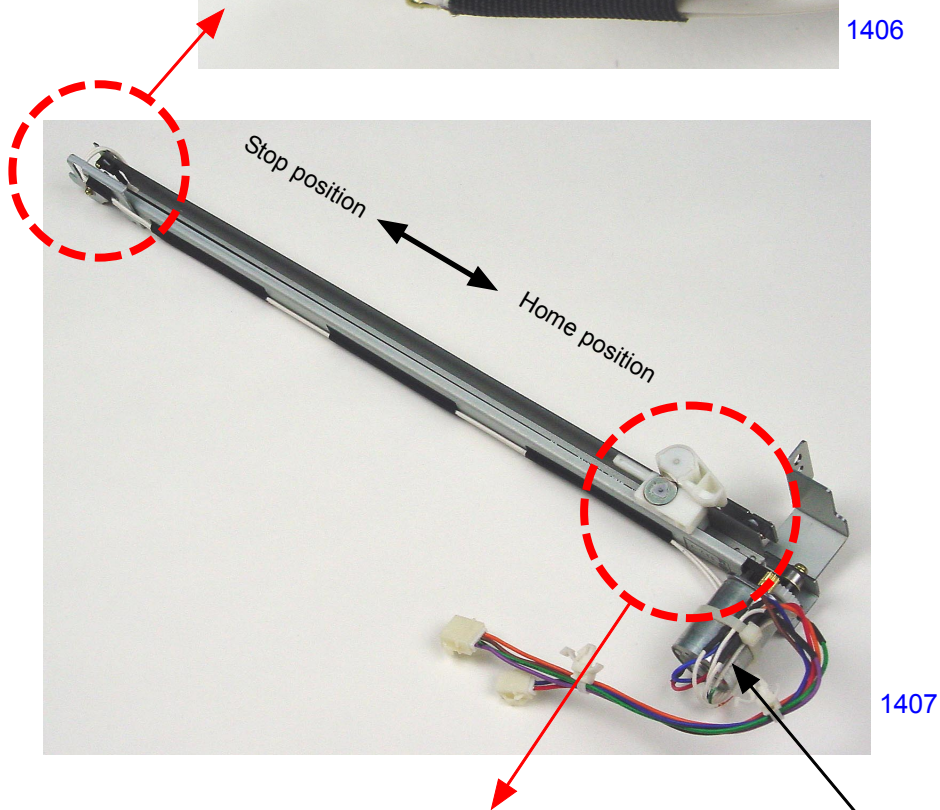
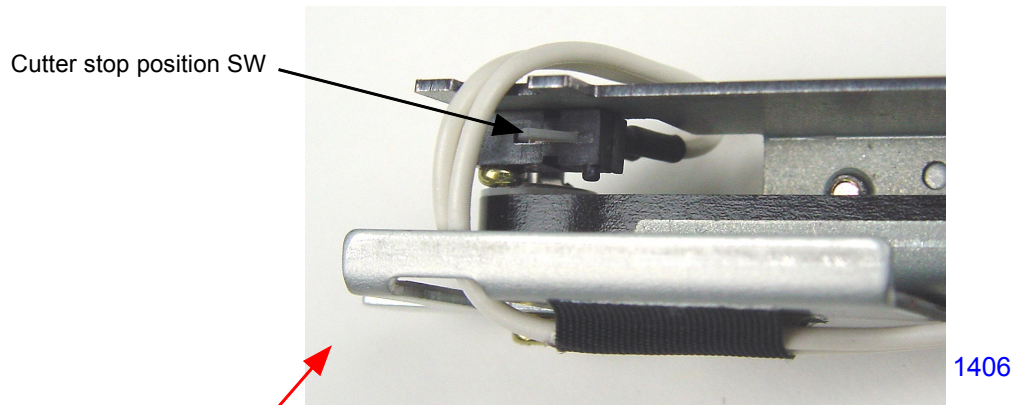
As the cutter motor activates, the gears turn to rotate the rotary blade. The cam on the metal gear pushes against the actuator of the cutter HP SW and after one rotation of the cam the switch actuator arrives back to the flat-cut on the cam. The switch actuator is no longer pressed by the cam and the cutter motor stops.



3-2. Master Cutting Mechanism (Shuttle cutter : excluding A3 machine)

The master is cut by the round disc shuttle cutter blade sliding from the home position at one end to the cutter stop position on the other end of the cutter unit. Once the disc blade cuts the master material, it returns back to the home position to end the cutting operation.

The position of the disc blade is checked by the cutter HP SW and cutter stop position SW. The blade is at the home position when the cutter stop position SW is OFF and cutter HP SW is ON.



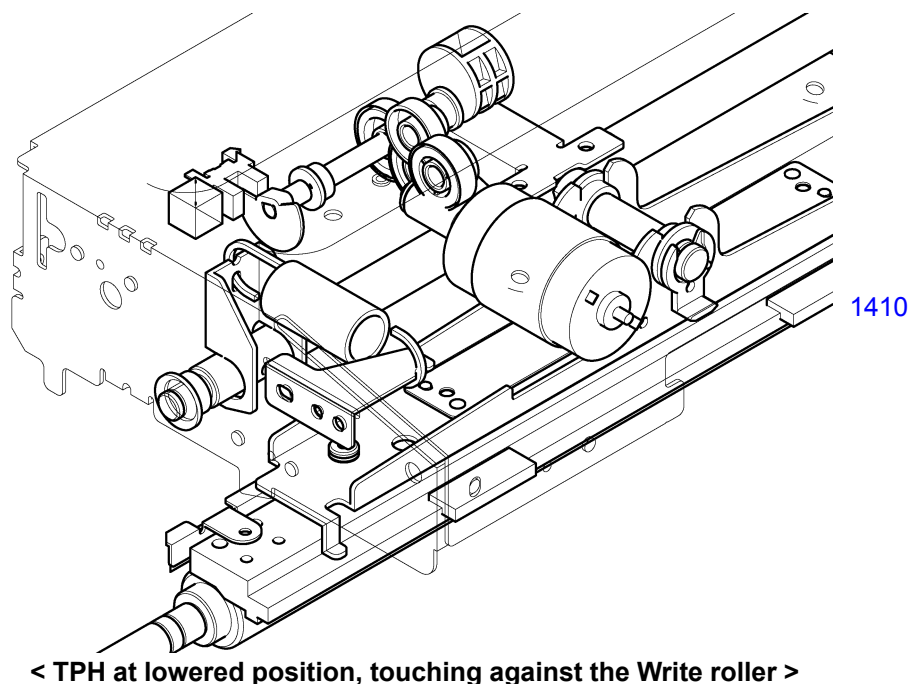
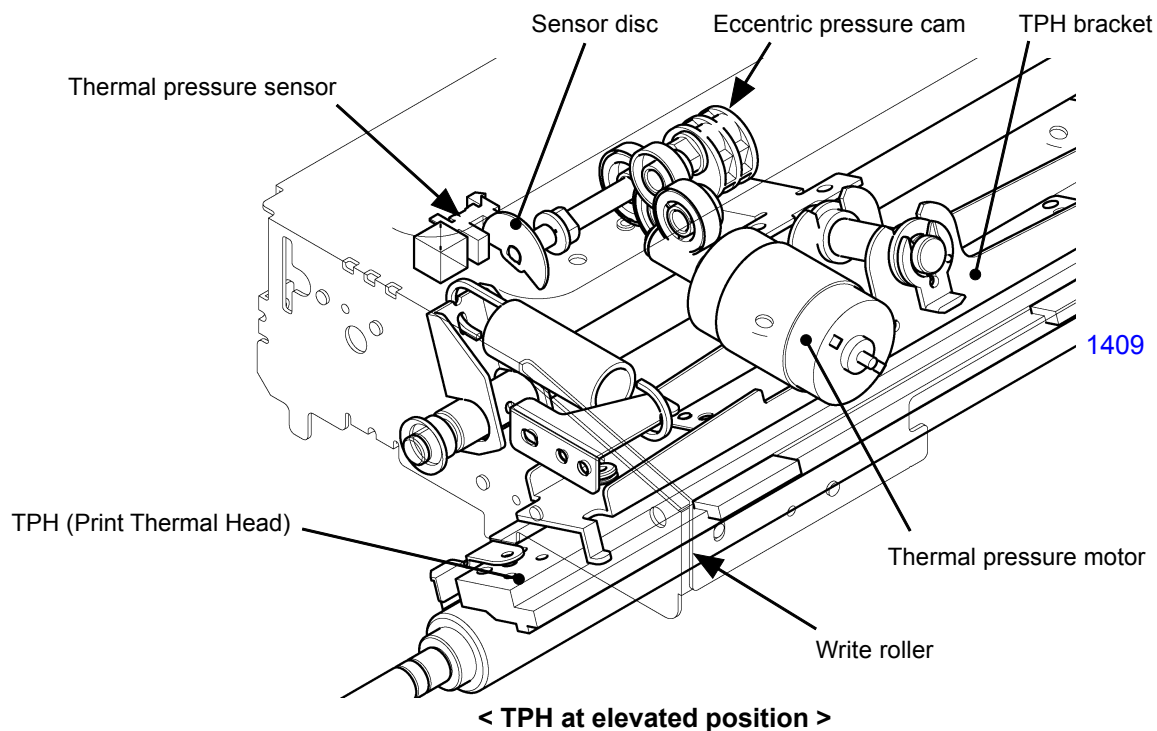
4. TPH (Thermal Print Head) Elevation Mechanism

When the machine is at standby or when loading the master onto the print drum after master making, the TPH is elevated away from the write roller. The TPH is lowered against the write roller only during the master making and master transfer operation.

The up and down movement of the TPH is made by the rotation of the eccentric pressure cam rotated by the thermal pressure motor.

The stop position of the TPH, whether going up or down, is detected by the thermal pressure sensor and sensor disc.

When the machine power is switched ON or when the all-reset button is pressed, the initialization movement of the machine elevates the TPH away from the write roller.



5. Master Set Mechanism

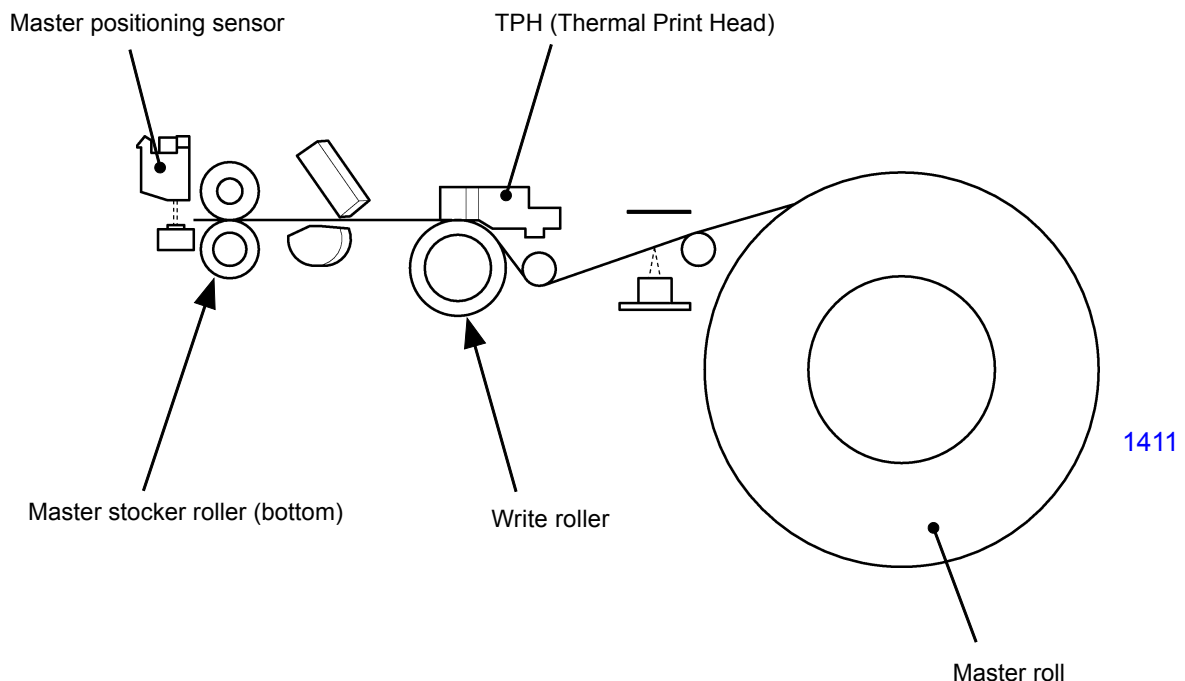
When the master making unit upper cover is closed and the set sensor detects the closed cover, the master set operation, described below, takes place.

First, the TPH is elevated down against the write roller. Then the write pulse motor rotates the write roller and master stocker roller to feed the master material forward until the leading edge of the master material is detected by the master positioning sensor. The write pulse motor stops and the TPH is elevated up. The write pulse motor rotates again to advance the master material forward 20mm by the rotation of the master stocker roller and the pulse motor stops.

The TPH is elevated down against the write roller again and the write pulse motor rotates in the reverse direction to bring the master material back. From the point when the leading edge of the master material clears away from the detection of the master positioning sensor, the master material continues to come back 5mm distance and the motor stops, and the TPH elevates up. This measurement can be adjusted by test mode No.540 [Master front-end position adjustment]. The master set operation ends and the master making unit waits for the master making operation to start.

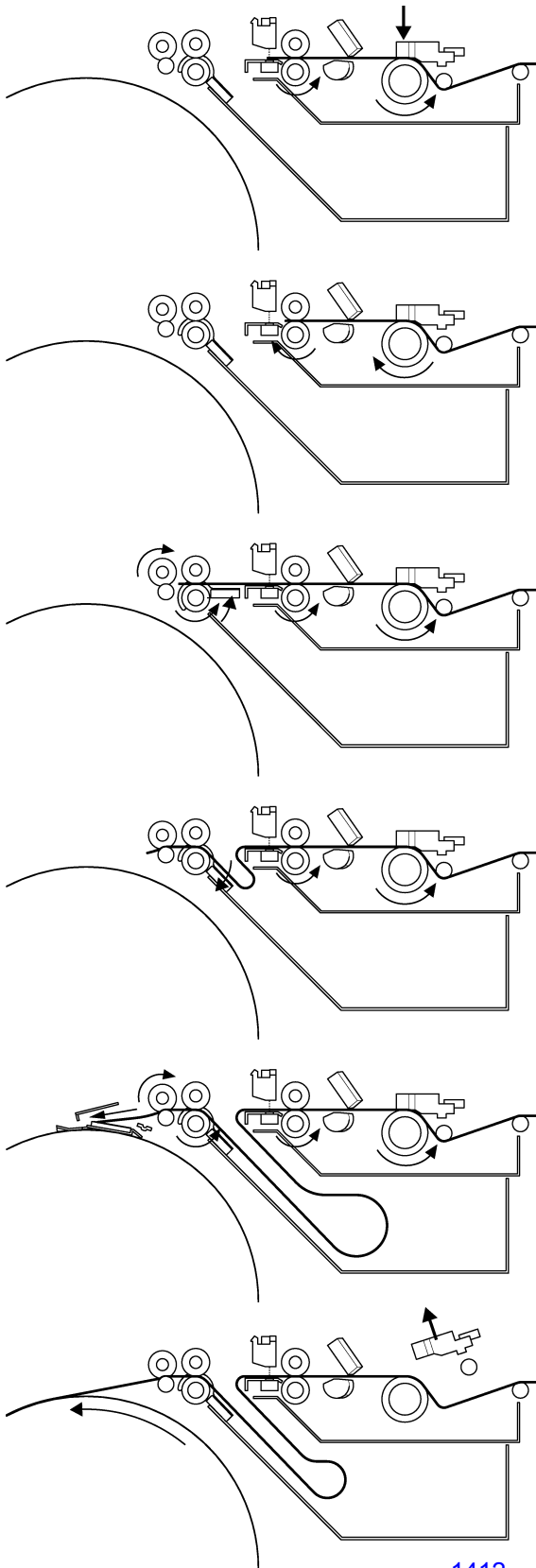
The master set operation is also performed after each master cut operation, as described below.

After the cutter operates to cut the master material, the TPH elevates down against the write roller. The write pulse motor activates to send the master material forward until the leading edge of the master material is detected by the master positioning sensor. The pulse motor stops once, and then rotates in the reverse direction for 5mm from the point the leading edge of the master material escapes from the master positioning sensor (adjustable by test mode No.540). The write pulse motor stops and elevates the TPH up. The master set operation ends and the master making unit waits for the master making operation to start.



6. Master Making Movement

The start of master making to the start of master loading on the print drum is explained in sequence below.



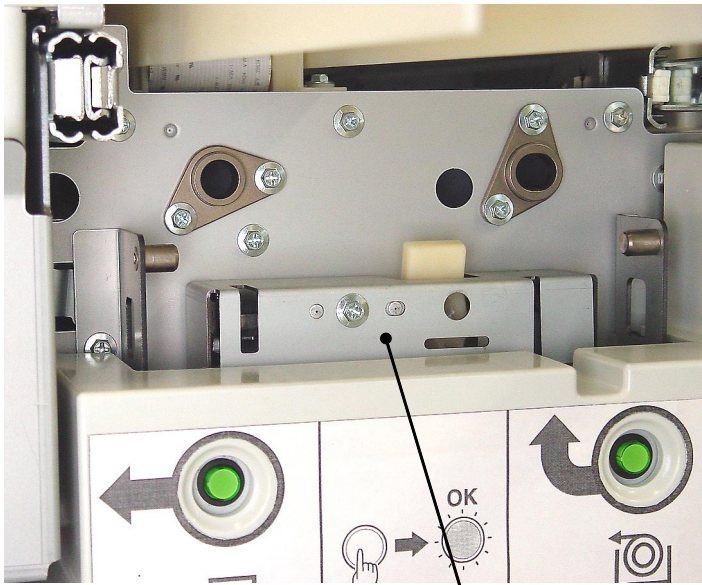
1412

- (1) At the start of the master making, the TPH comes down to pinch the master material between the TPH and the write roller. The write pulse motor activates to rotate the write roller and master stocker roller in the forward direction to feed the master material towards the master positioning sensor.
- (2) The write pulse motor is rotates in the reverse direction to bring the master material back away from the master positioning sensor for a given distance and waits for the scanning to proceed.
- (3) With the master making start signal, the master stocker guide plate rises to cover the stocker room. Both the load pulse motor and write pulse motor rotates in the forward direction to transfer the leading edge of the master material through the load roller. The master making starts.
- (4) The master stocker guide plate drops down to let the oncoming master material to enter into the stocker room. The separation fans operate to assist the master material to enter into the stocker room smoothly, and when the clamping guide roller grips the master material, the load pulse motor stops. The master making continues.
- (5) The print drum stops at position-A and the clamp plate opens. The load pulse motor activates to send the leading edge of the master material to the clamp plate. The clamp plate closes and clamps the master material. The master making still continues.
- (6) As the master making ends, the TPH elevates up and the print drum starts to rotate, wrapping the master material around the print drum.

Disassembly

1. Removing the Master Making U Lock Sensor

- (1) Pull out the master making unit and switch off the machine power.
- (2) Detach the safety SW cover by removing a screw (M4x8: 1pc).
- (3) Unplug the connector, remove a screw (M3x6: 1pc) and detach the master making U lock sensor.

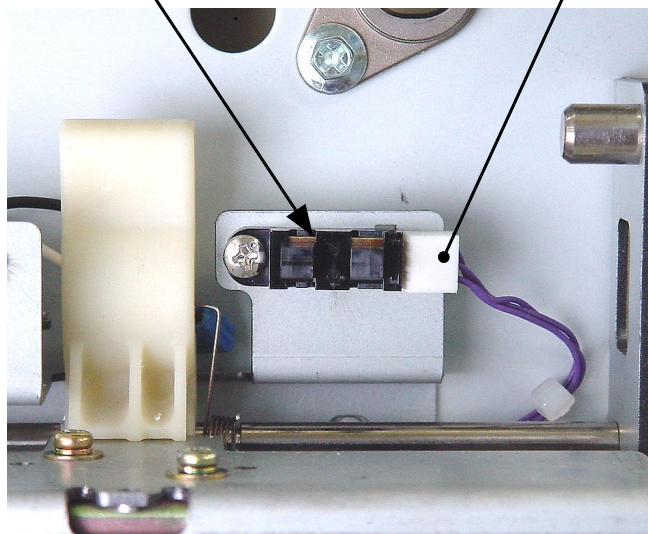


1413

Safety SW cover

Master making U lock sensor

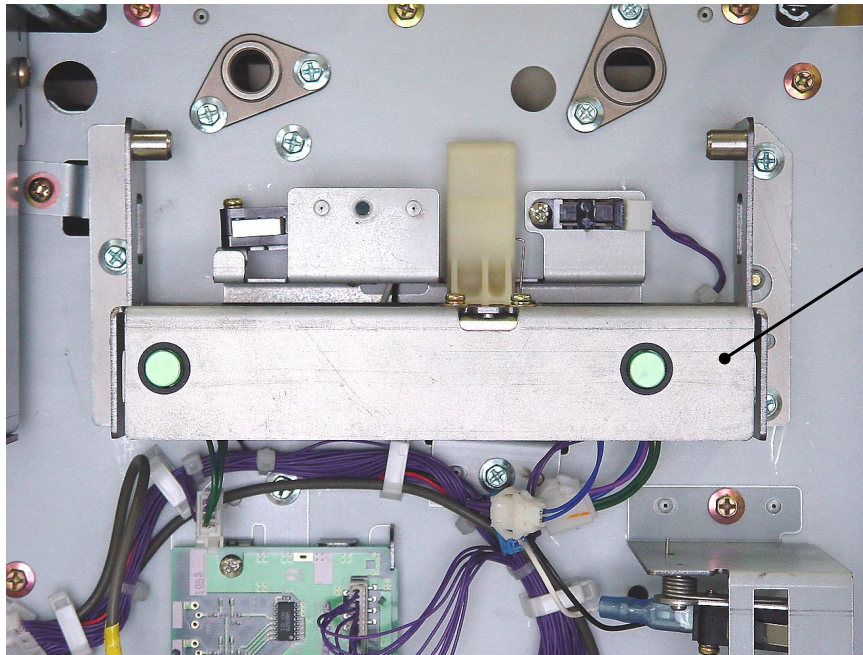
Connector



1414

2. Removing the Print Drum, Master Making U Release Button, Lock Solenoid, and Safety Switch

- (1) Detach the front cover.
- (2) Pull out the master making unit and switch off the machine power.
- (3) Detach the safety SW cover by removing a screw (M4x8: 1pc).
- (4) Unplug connectors (3 locations), remove screws (M4x8: 3pcs) and detach the master making U lock unit.

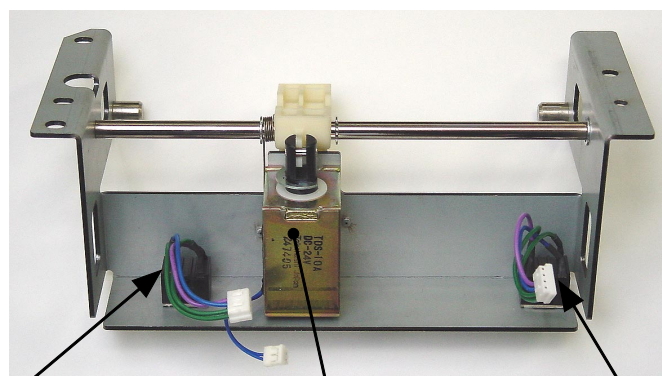


Removing the print drum release button and master making U release button

- (5) Undo two hooks on each button from the master making U lock unit and remove the buttons.

Removing the master making U lock solenoid

- (5) Remove screws (M3x6: 2pcs) and detach the master making U lock solenoid.



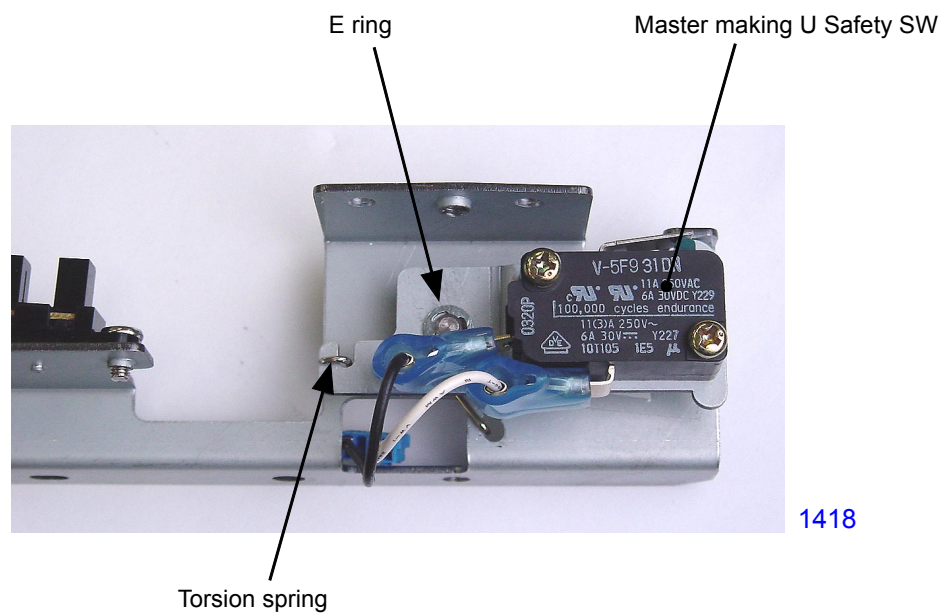
Master making U release button

Master making U lock solenoid

Print drum release button

Removing the master making U safety SW

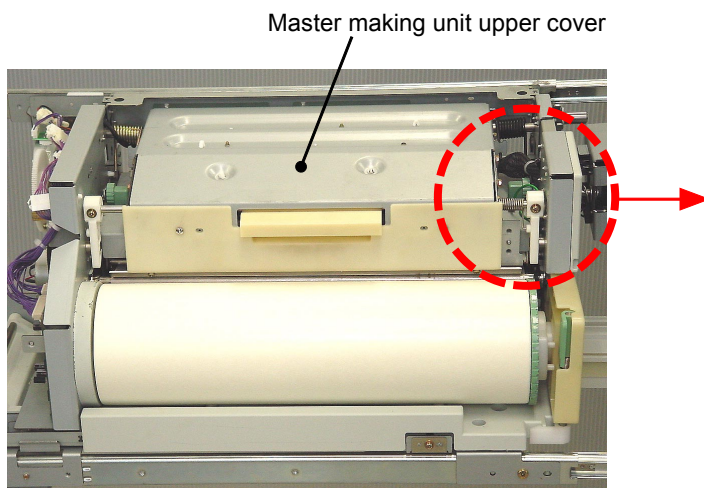
- (5) Unplug the connectors (2 locations), remove a screw (M4x8: 1pc) and detach the master making U safety SW assembly.
- (6) Unhook the torsion spring, remove an E-ring and detach the master making U safety SW together with the bracket. Remove the switch from the bracket.



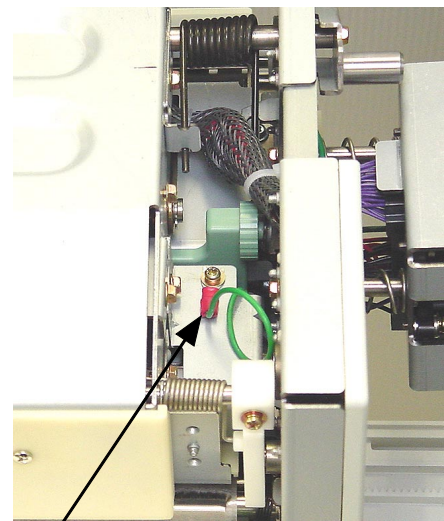
3. Removing the Print Thermal Head Assembly

- (1) Pull out the master making unit and switch off the machine power.
- (2) Disconnect the ground wire by removing a screw (M3x6: 1pc).
- (3) Open the master making unit upper cover.
- (4) Detach the master making unit bottom cover by removing screws (M3x6: 2pcs).
- (5) Detach the connector cover by removing one screw (M3x6: 1pc).

- Continues on next page -

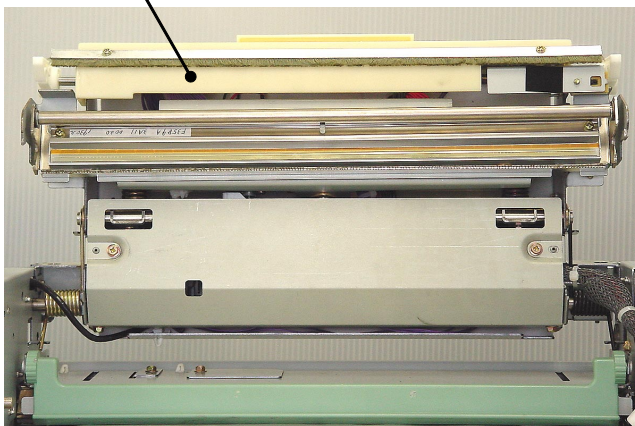


1419

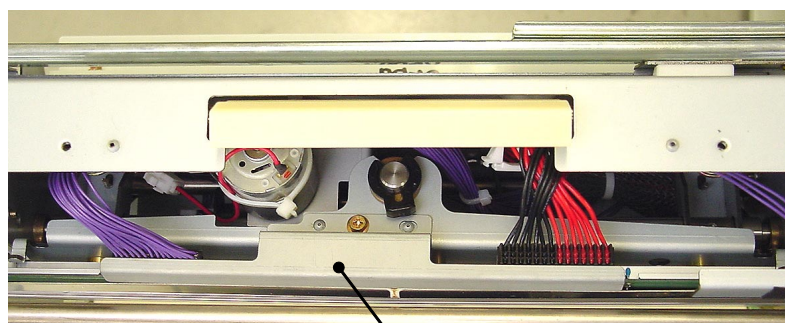


1420

Master making unit bottom cover

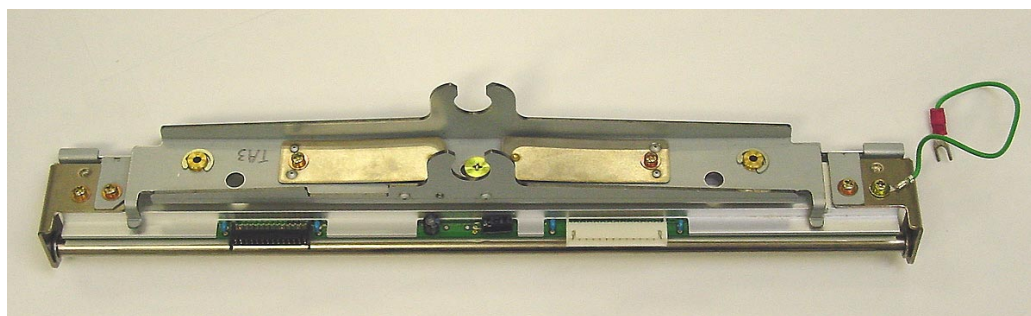
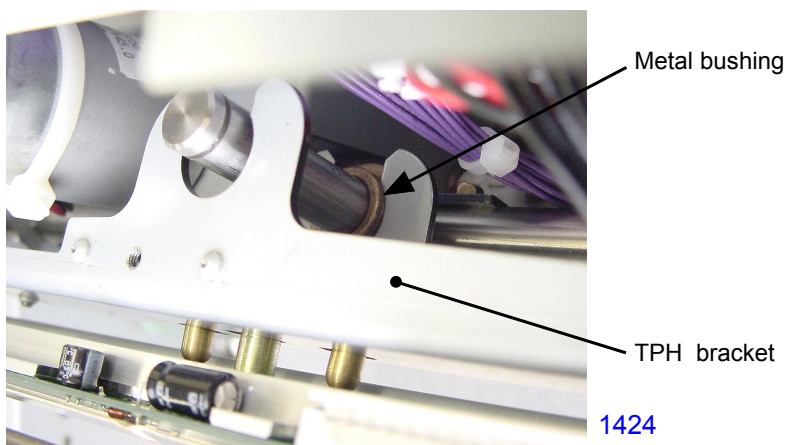
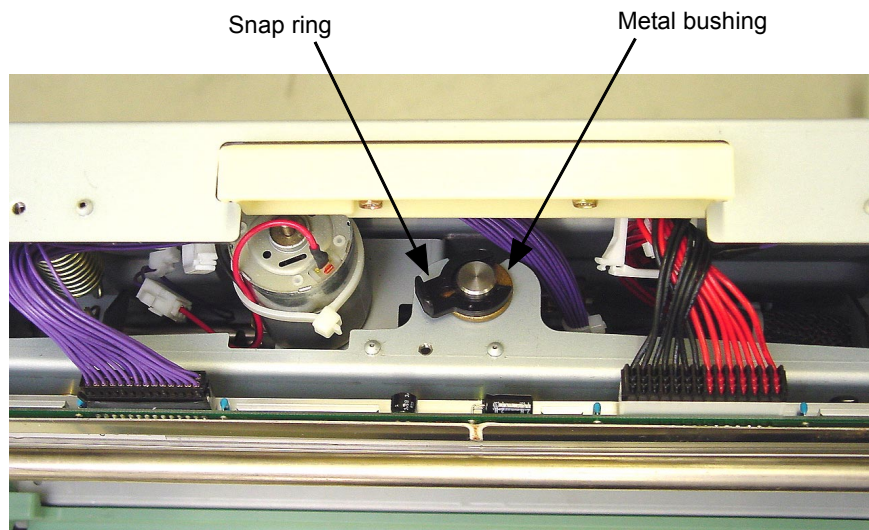


1421



1422

- (6) Unplug the connectors (2 locations), detach the snap ring and remove the metal bushing.
- (7) Slide off the metal bushing from the TPH bracket and remove the print thermal head assembly.

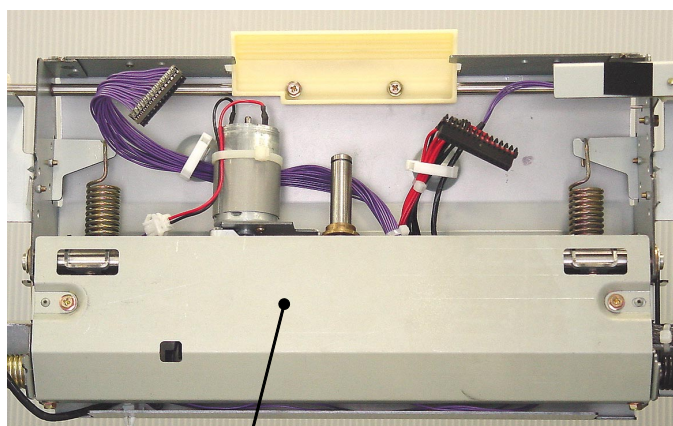


< Print Thermal Head Assembly >

4. Removing the Thermal Pressure Motor Assembly

- (1) Pull out the master making unit and switch off the machine power.
- (2) Remove the thermal print head assembly.
- (3) Detach the thermal pressure gear cover by removing screws (M3x6: 4pcs).
- (4) Remove the two thermal pressure springs.
- (5) Remove E-rings and metal bushings from both ends of the TPH support shaft, and remove the shaft.

- Continues on next page -

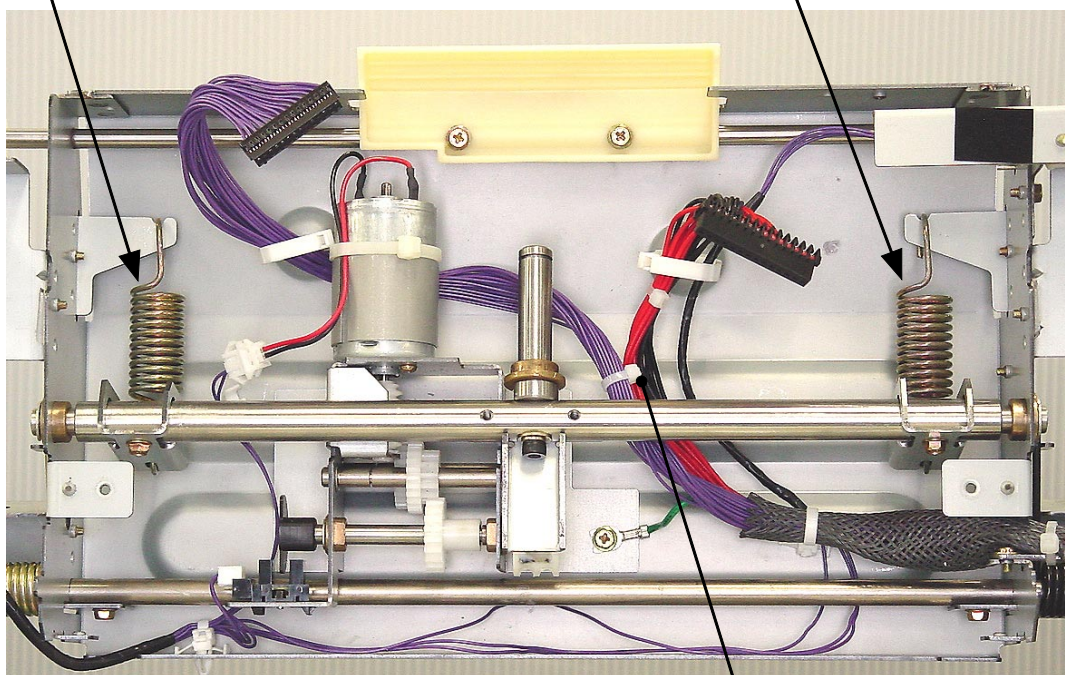


1426

Thermal pressure gear cover

Thermal pressure spring

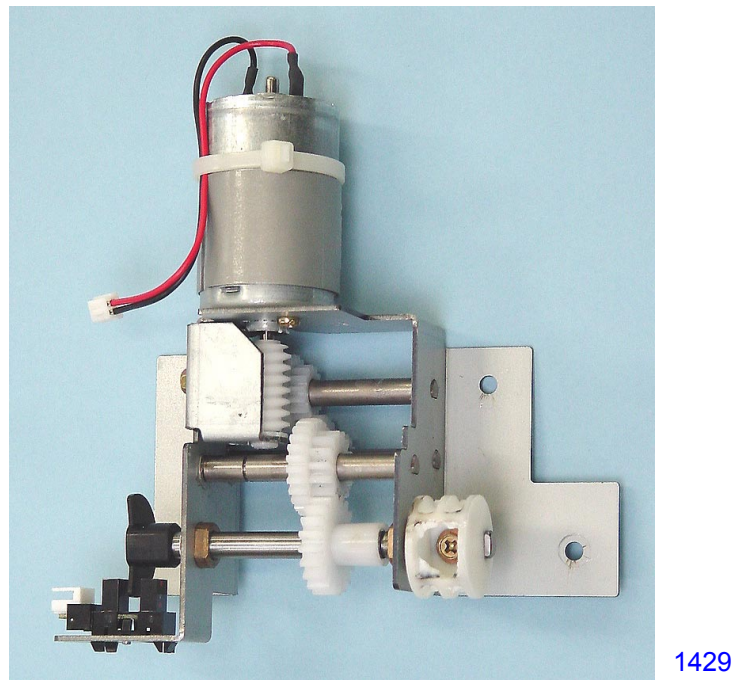
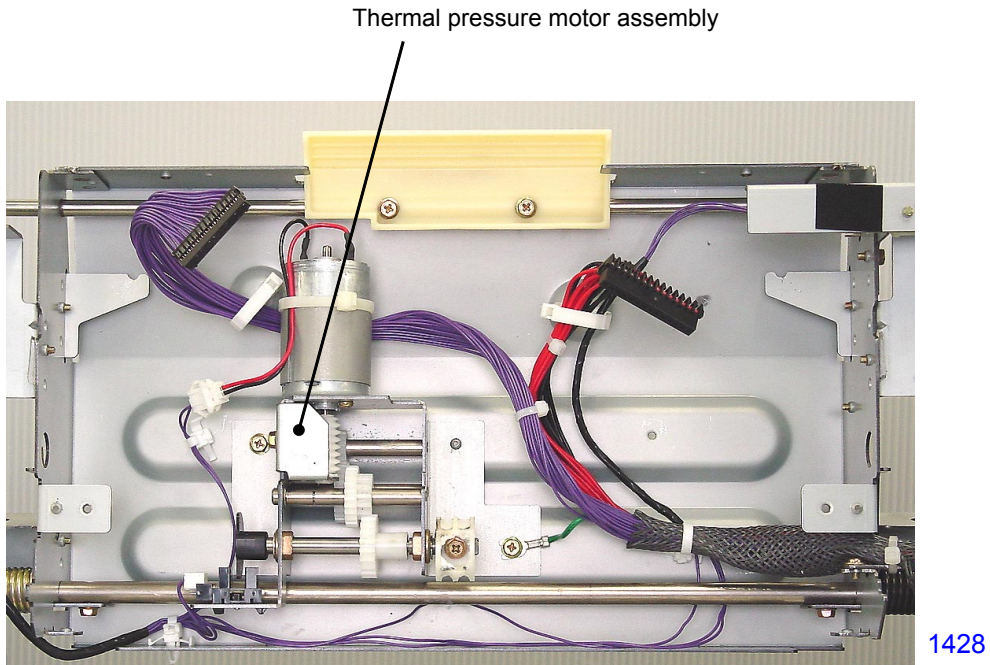
Thermal pressure spring



1427

TPH support shaft

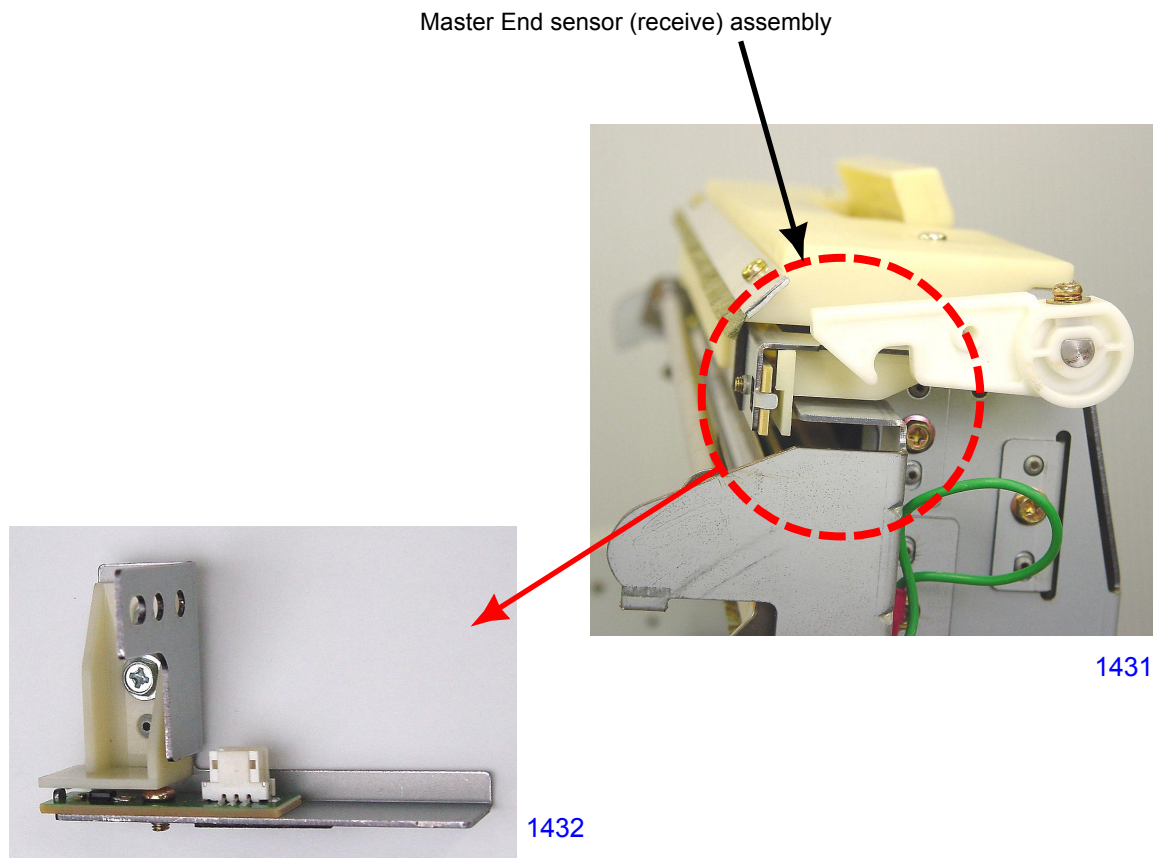
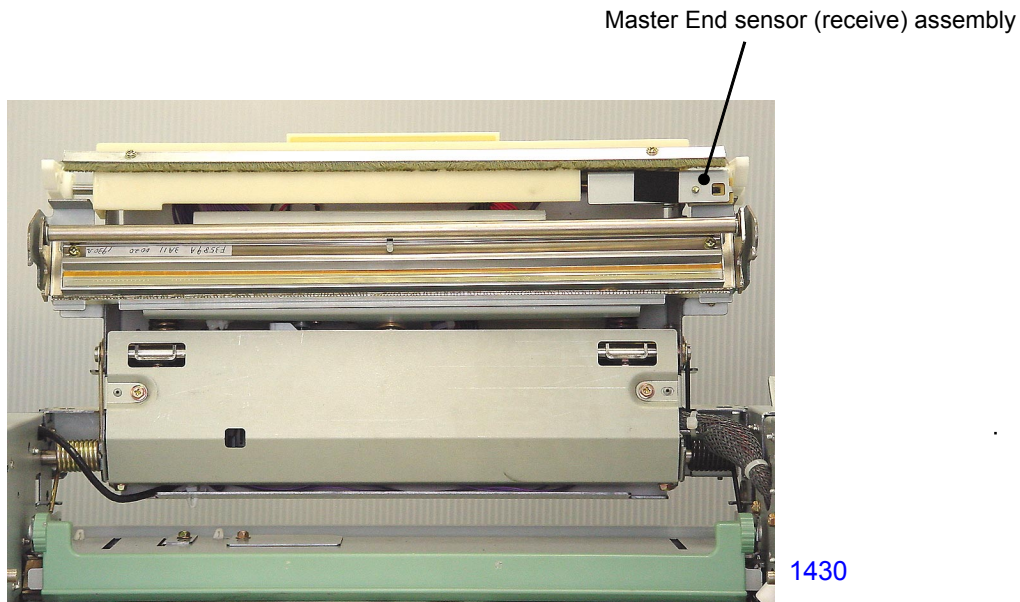
- (6) Detach the thermal pressure motor assembly by disconnecting the connectors to the motor and sensor and removing screws (M3x6: 2pcs).



< Thermal Pressure Motor Assembly >

5. Removing the Master End Sensor (receive) Assembly

- (1) Pull out the master making unit and switch off the machine power.
- (2) Open the master making unit upper cover.
- (3) Remove a screw (M3x6: 1pc), unplug the sensor connector and detach the master end sensor (receive) assembly.

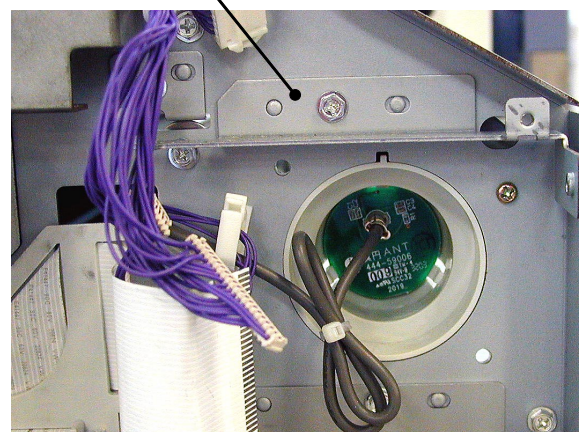
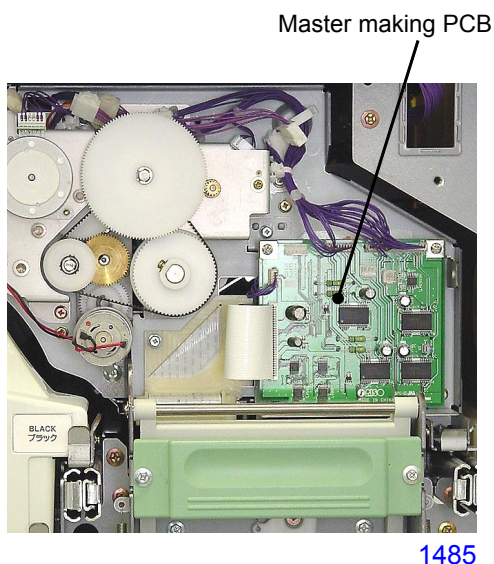
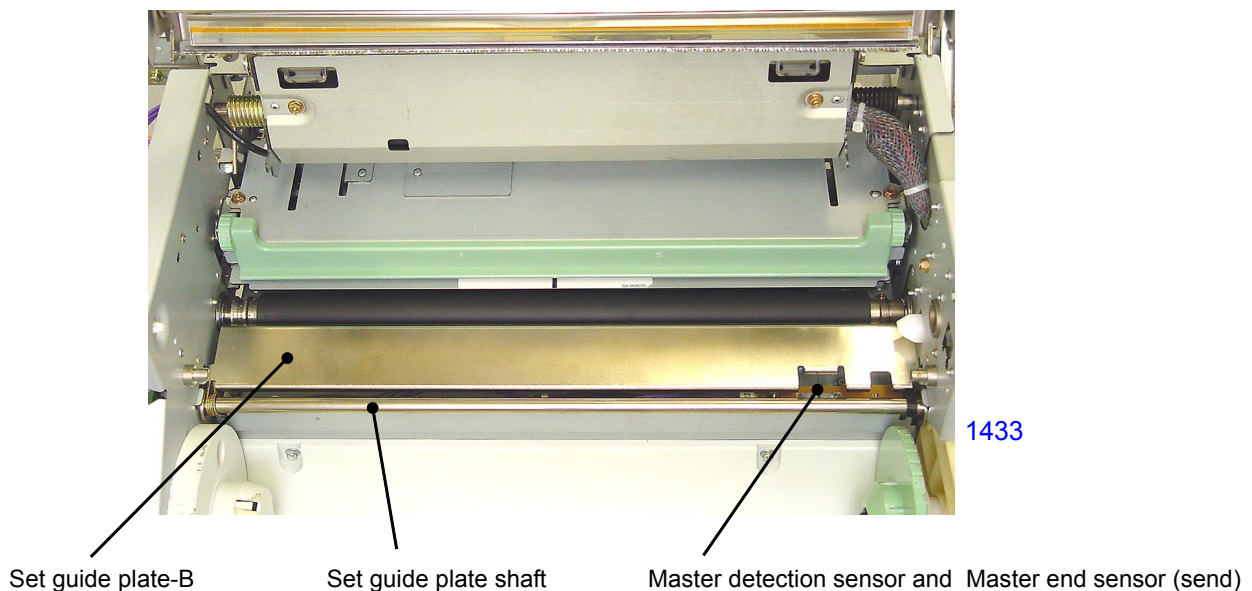


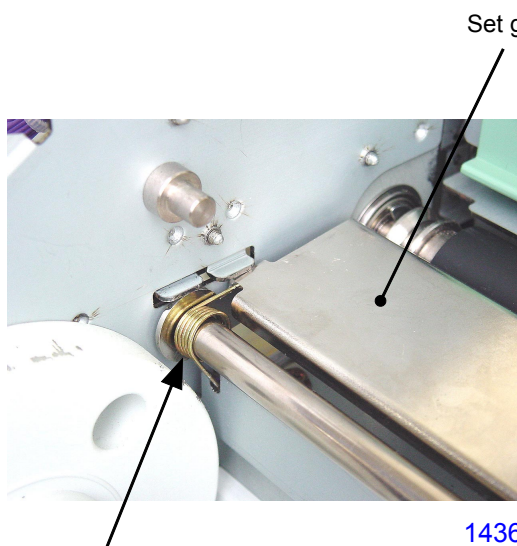
< Master End Sensor (receive) Assembly >

6. Removing the Master Detection Sensor and Master End Sensor (send) Assembly

- (1) Pull out the master making unit and switch off the machine power.
- (2) Open the master making unit upper cover and remove the master roll.
- (3) Detach the master making cover front by removing screws (M4x8: 4pcs).
- (4) Detach the master making PCB by removing screws (M3x6: 2pcs)
- (5) Detach the master making PCB bracket (M4x8: 1 pc)
- (6) Remove the stopper plates front and rear by removing screw (M3x6: 1pc each).
 - * Since the set guide plate-B is forced up by two springs, set guide plate-B springs front and rear, press down the set guide plate-B when removing the stopper plates.
- (7) Detach and hang loose the master-flange assembly (rear) by removing screws (M3x6: 2 pcs).
- (8) Detach the set guide plate-B, together with the set guide plate shaft by removing the mounting screws of the shaft (M3x6: 1 pc each).

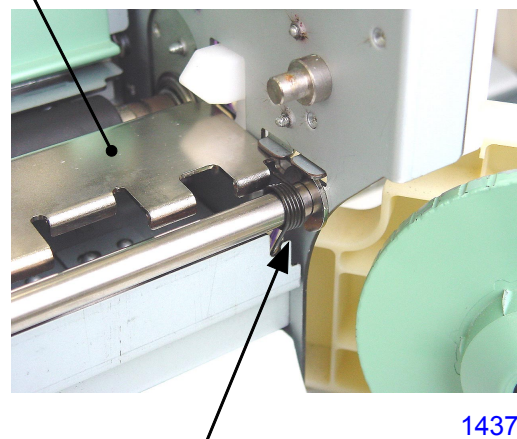
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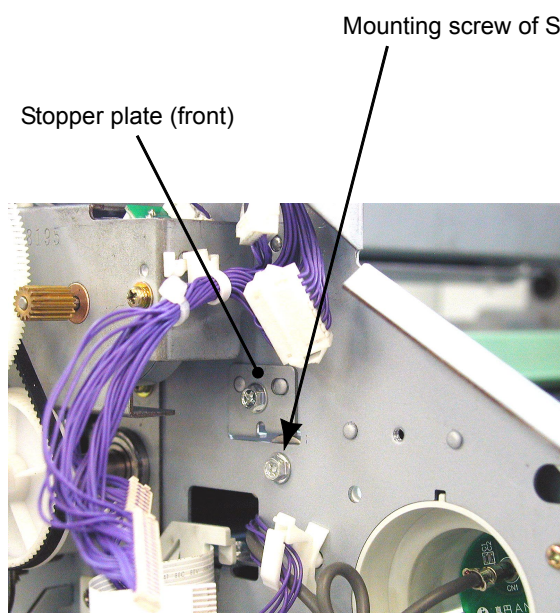
Set guide plate-B spring (front)

1436



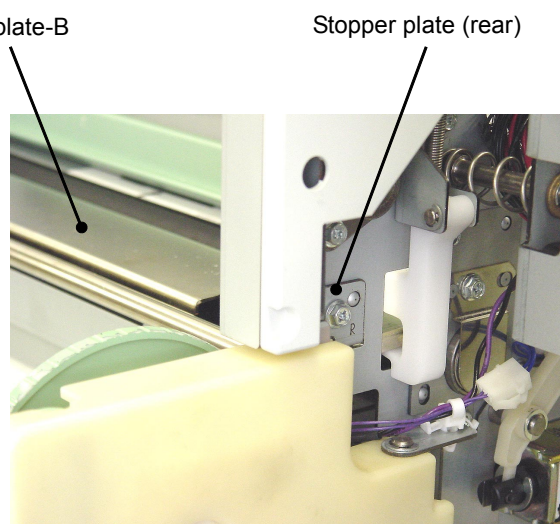
Set guide plate-B spring (rear)

1437

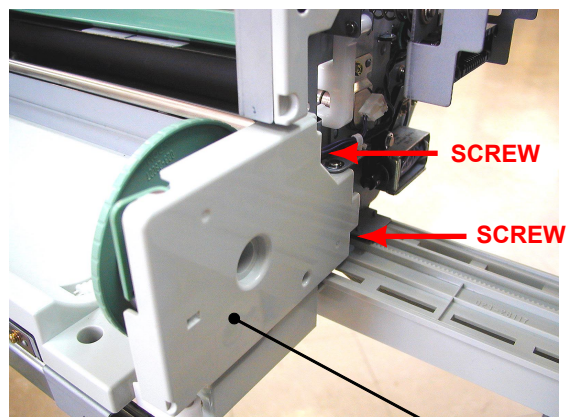


1434

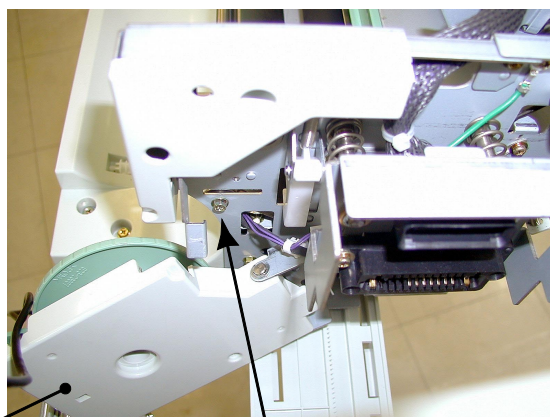
Set guide plate-B



1435



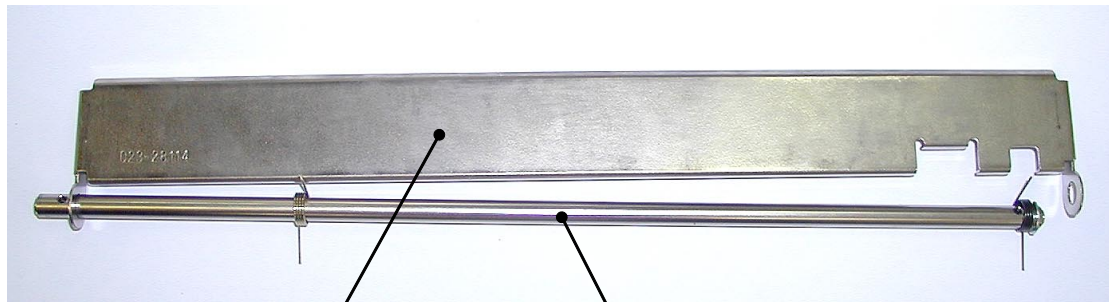
1488



1487

Master flange assembly (rear): Remove 2 screws and hang loose.

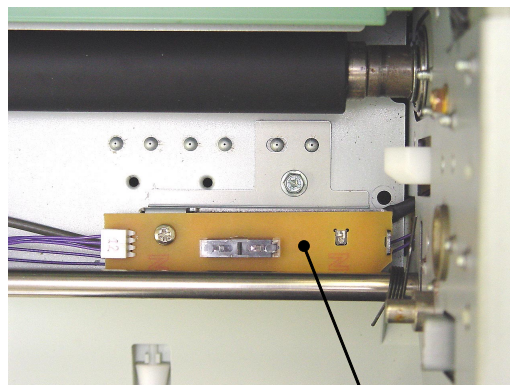
Mounting screw of Set guide plate shaft



Set guide plate-B

Set guide plate shaft

- (6) Detach the master detection sensor and master end sensor (send) assembly by disconnecting a connector and removing a screw (M3x6: 1pc).



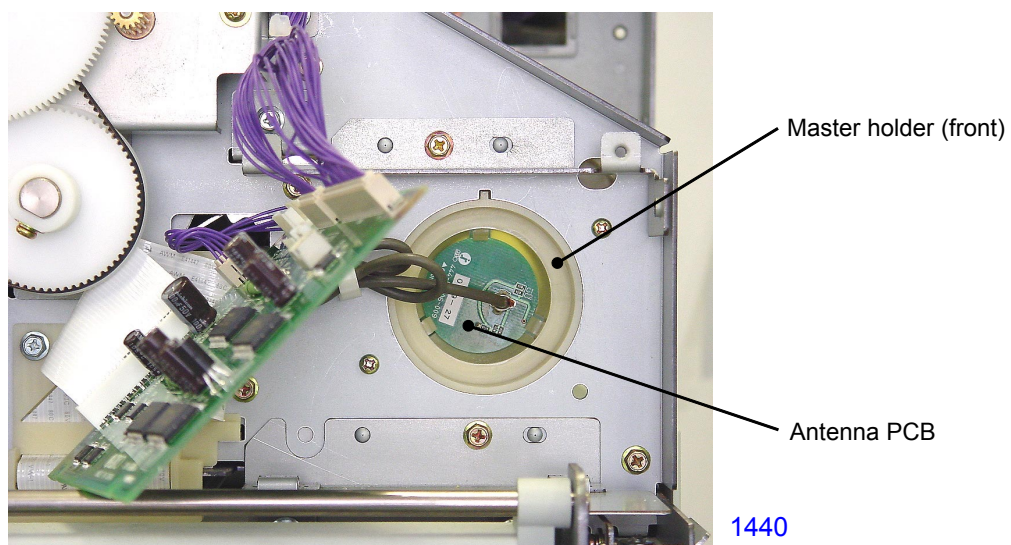
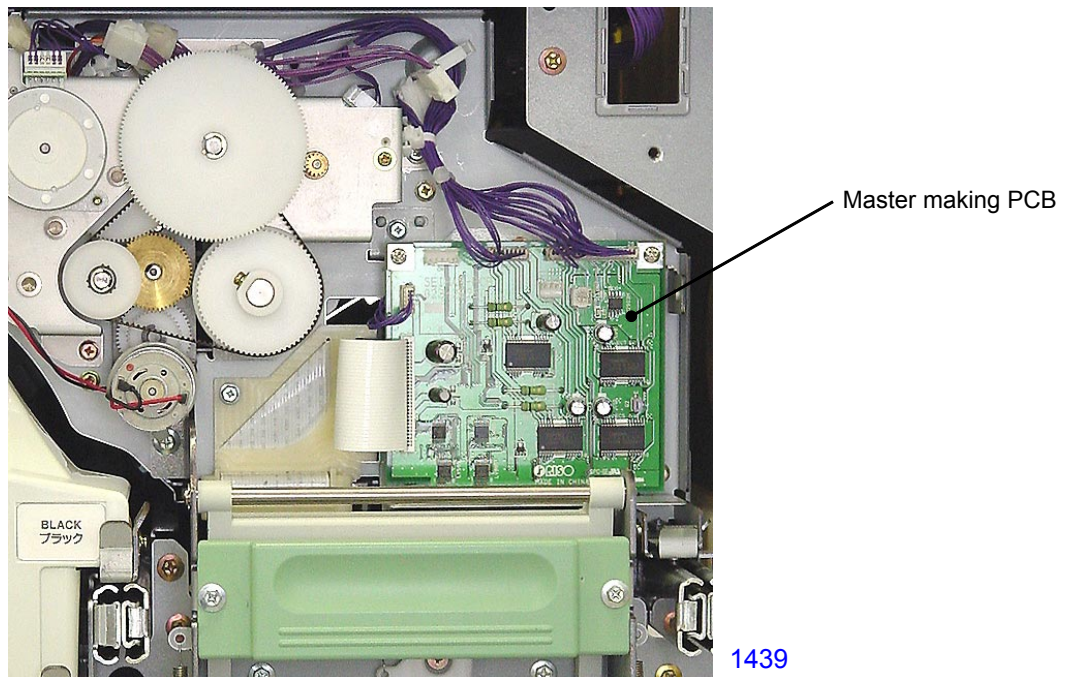
Master detection sensor and Master end sensor (send) assembly

< Precautions in Reassembly >

- Set guide plate-B spring (rear) is black in color.
- Hook the set guide plate-B springs (front and rear) correctly.
- The stopper plates (front and rear) are assembled back on the machine after the set guide plate-B springs. Therefore, the set guide plate-B must be pushed down when attaching the stopper plates on the machine.

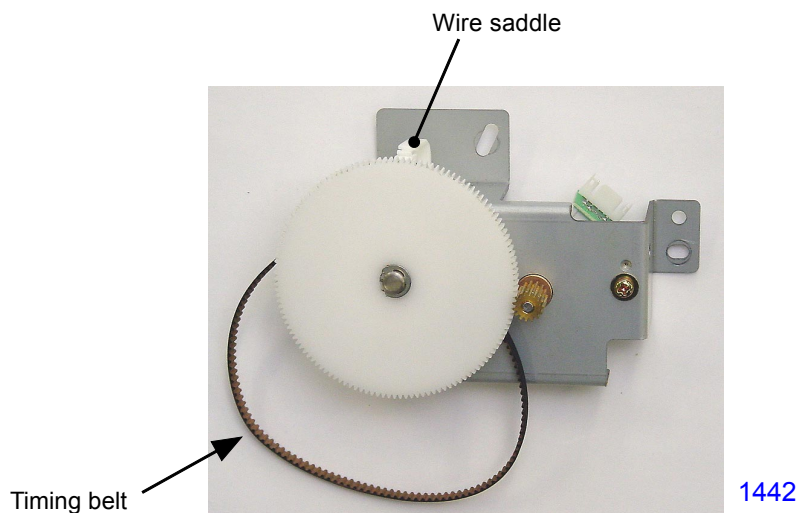
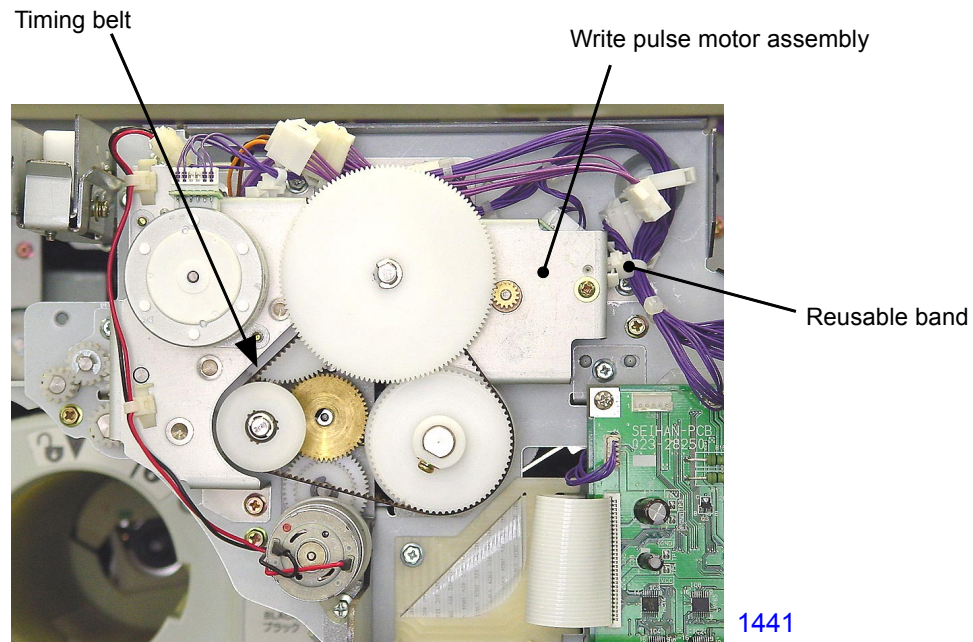
7. Removing the Antenna PCB

- (1) Pull out the master making unit and switch off the machine power.
- (2) Detach the master making cover front by removing screws (M4x8: 4pcs).
- (3) Detach the master making PCB by removing screws (M3x6: 2pcs).
- (4) Gently pull out the antenna connector, and detach the antenna PCB from the master holder (front) by unhooking from the three plastic claws of the master holder.



8. Removing the Write Pulse Motor Assembly

- (1) Pull out the master making unit and switch off the machine power.
- (2) Detach the master making cover front by removing screws (M4x8: 4pcs).
- (3) Unhook wire harness from the wire saddle on the bracket of the write pulse motor.
- (4) Detach the reusable band from the bracket of the write pulse motor and unplug the connector from the write pulse motor.
- (5) Remove screws (M3x6: 2pcs) and detach the write pulse motor assembly together with the timing belt.



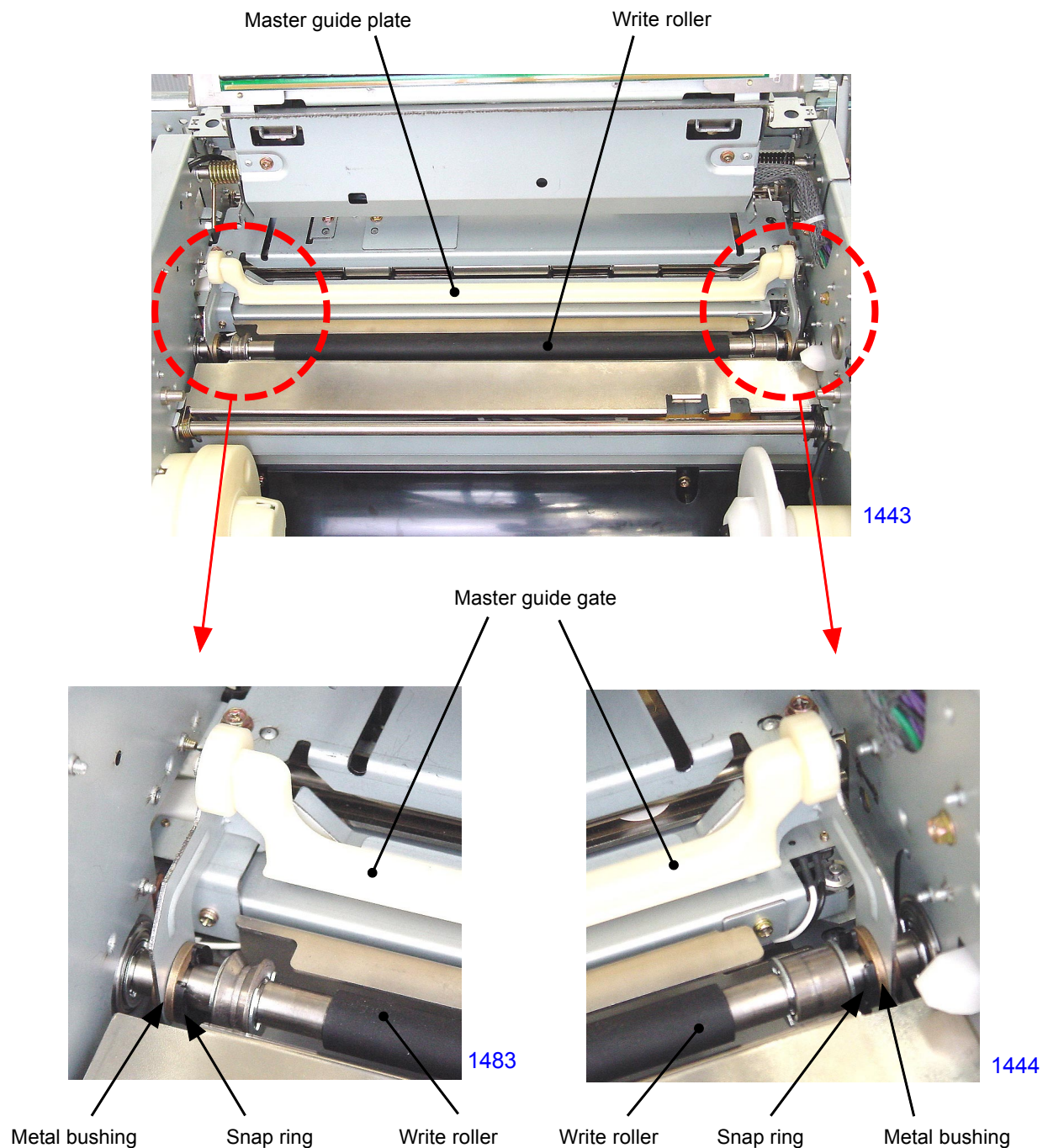
< Write pulse motor assembly >

< Precaution in Reassembly >

When installing the write pulse motor assembly back on the machine, screw on the motor assembly on the machine loosely. Then rotate the whole motor assembly in clockwise direction to apply tension on the timing belt. With adequate tension applied on the timing belt, securely tighten the mounting screws.

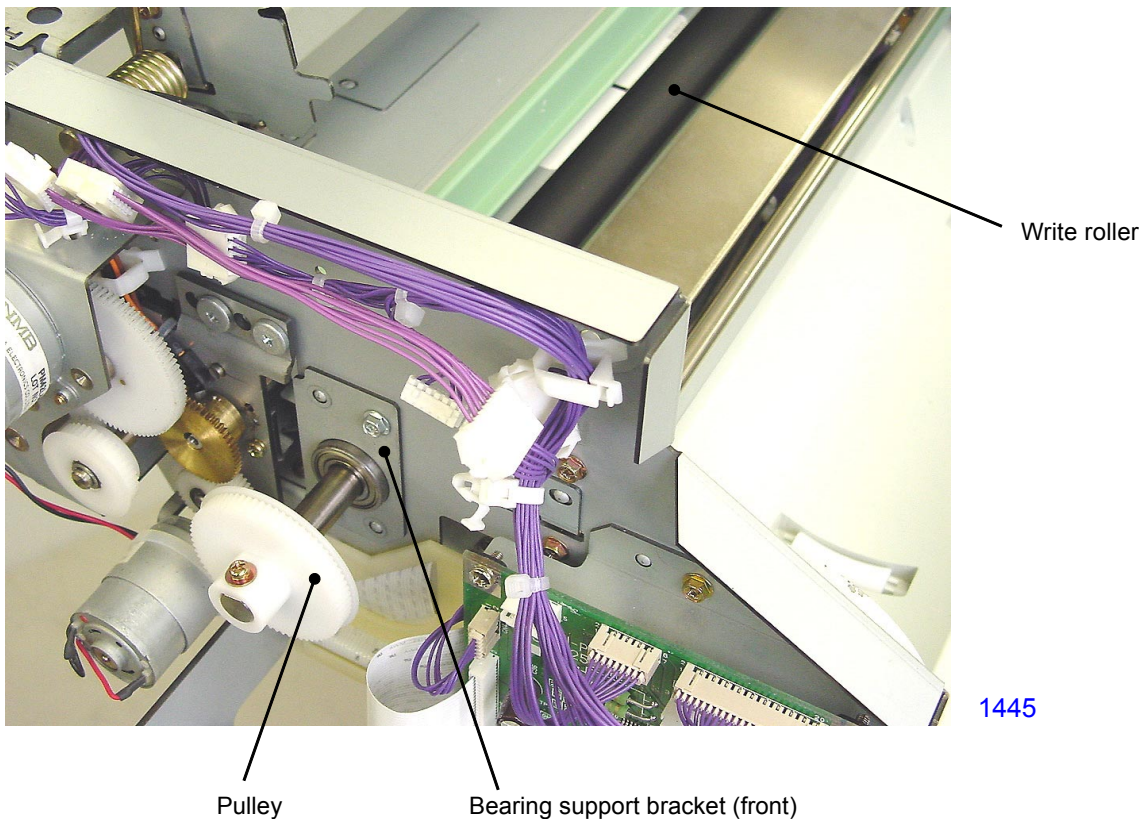
9. Removing the Master Guide Gate (excluding A3/Ledger machine)

- (1) Pull out the master making unit and switch off the machine power.
- (2) Open the master making unit upper cover and remove the master roll.
- (3) Detach the two snap rings from the shaft of the write roller.
- (4) Slide the two metal bushings inward on the write roller shaft and detach the master guide gate from the shaft of the write roller.



10. Removing the Write Roller

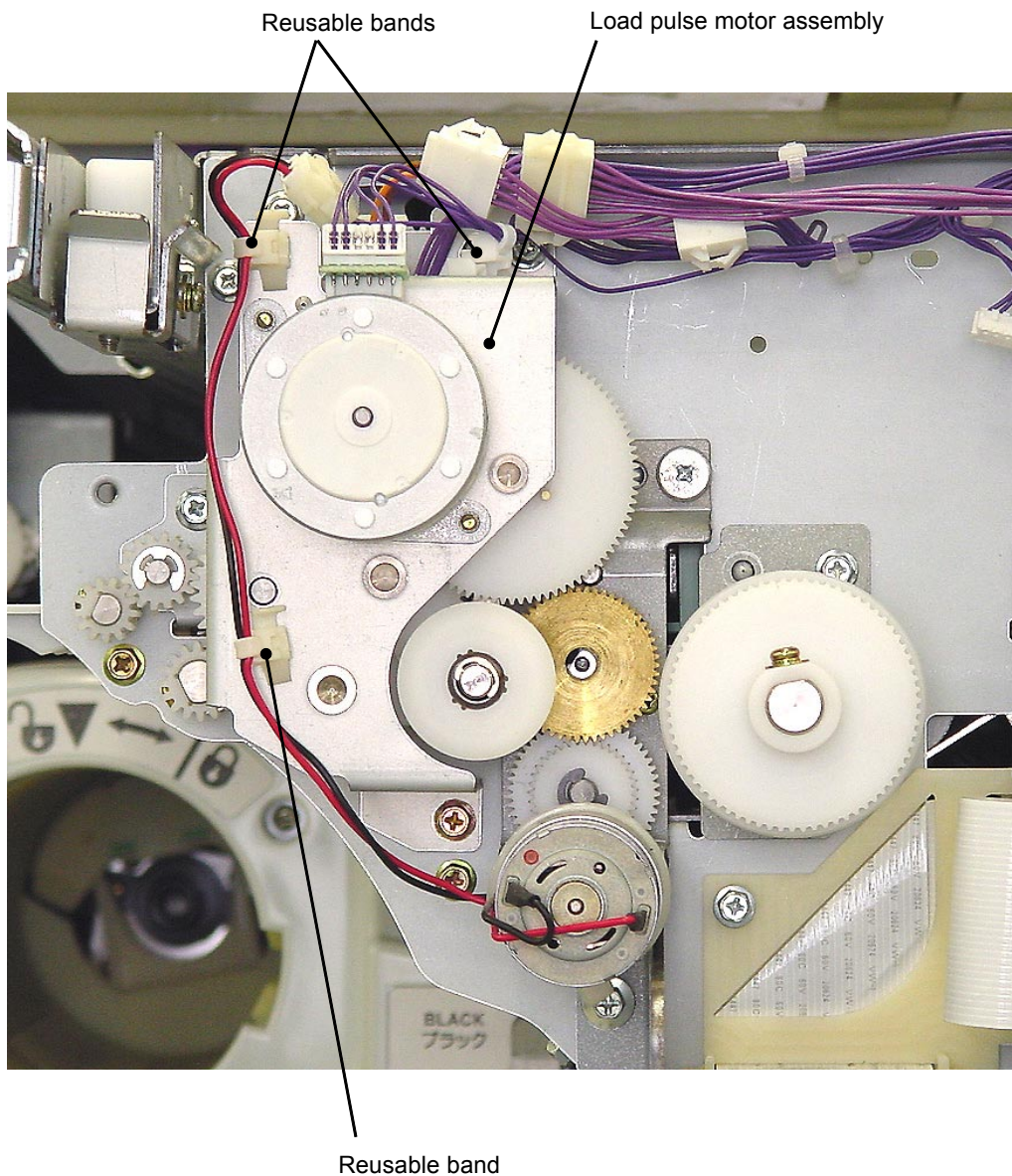
- (1) Pull out the master making unit and switch off the machine power.
- (2) Open the master making unit upper cover and remove following items.
 - Master roll
 - master making cover front
 - Write pulse motor assembly
 - Master guide gate (excluding A3/Ledger machines)
- (3) Detach the write roller pulley by removing a screw (M3x8: 1pc).
- (4) Detach the bearing support bracket (front) by removing screws (M3x6: 2pcs).
- (5) Pull out the write roller through the hole on the side frame.



< Write roller >

11. Removing the Load Pulse Motor Assembly

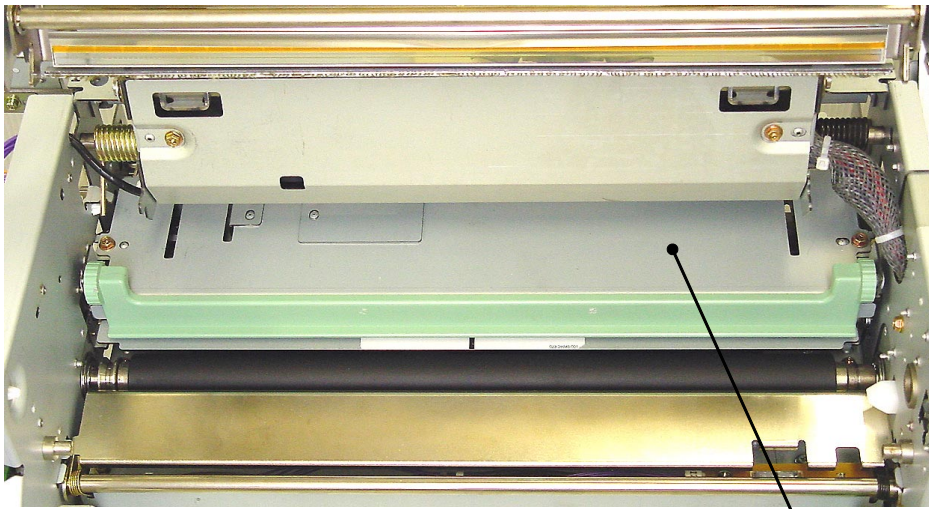
- (1) Pull out the master making unit and switch off the machine power.
- (2) Open the master making unit upper cover and remove following items.
 - Master roll
 - master making cover front
 - Write pulse motor assembly
- (3) Detach the reusable bands (3 locations) from the bracket of the load pulse motor and unplug the load pulse motor connector.
- (4) Remove screws (M3x6: 2pcs) and detach the load pulse motor assembly.



1447

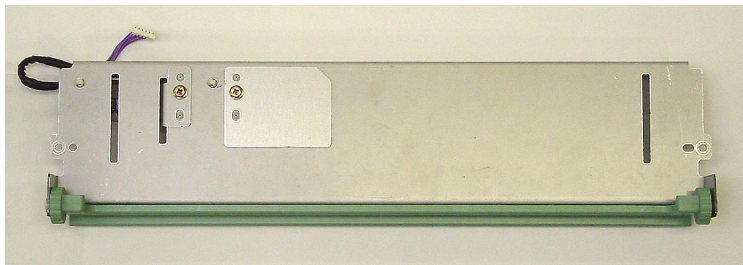
12. Removing the Cutter Cover Assembly (A3/Ledger machines only)

- (1) Pull out the master making unit and switch off the machine power.
- (2) Open the master making unit upper cover and remove following items.
 - Master roll
 - master making cover front
 - Write pulse motor assembly
 - Load pulse motor assembly
- (3) Unplug the sensor connector, remove screws (M3x6: 2pcs), and detach the cutter cover assembly while pulling out the wire harness from the hole on the machine side frame.



1448

Cutter cover assembly

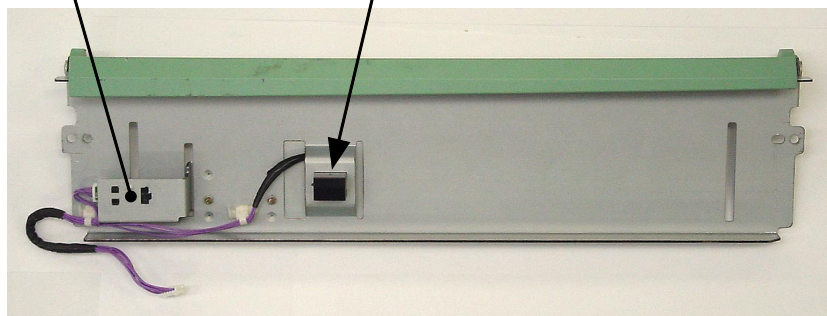


1449

< Cutter cover assembly >

Master making unit upper cover set sensor

Master positioning sensor



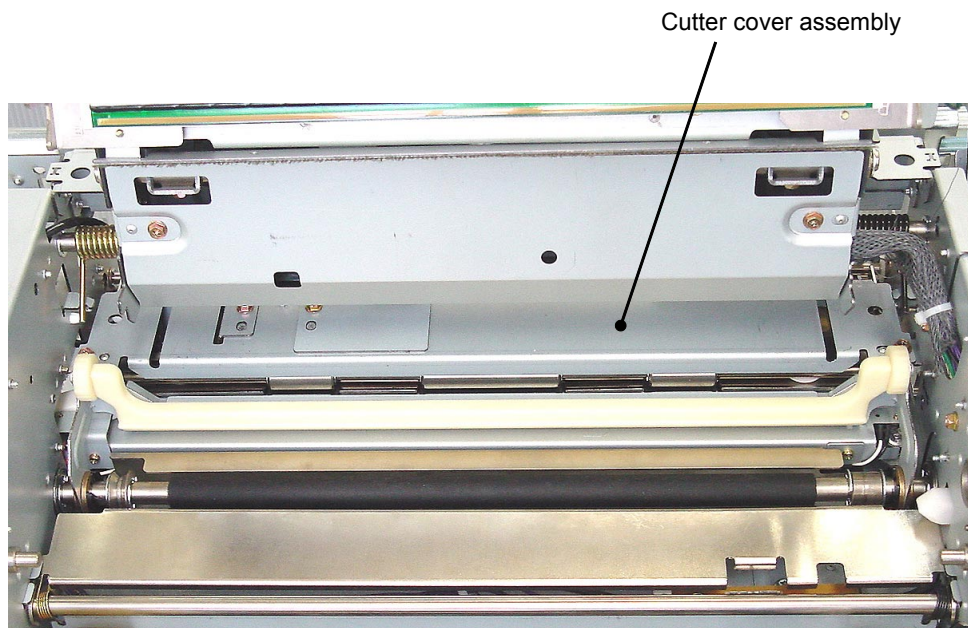
1450

< Cutter cover assembly >

(Under view)

13. Removing the Cutter Cover Assembly (excluding A3/Ledger machines)

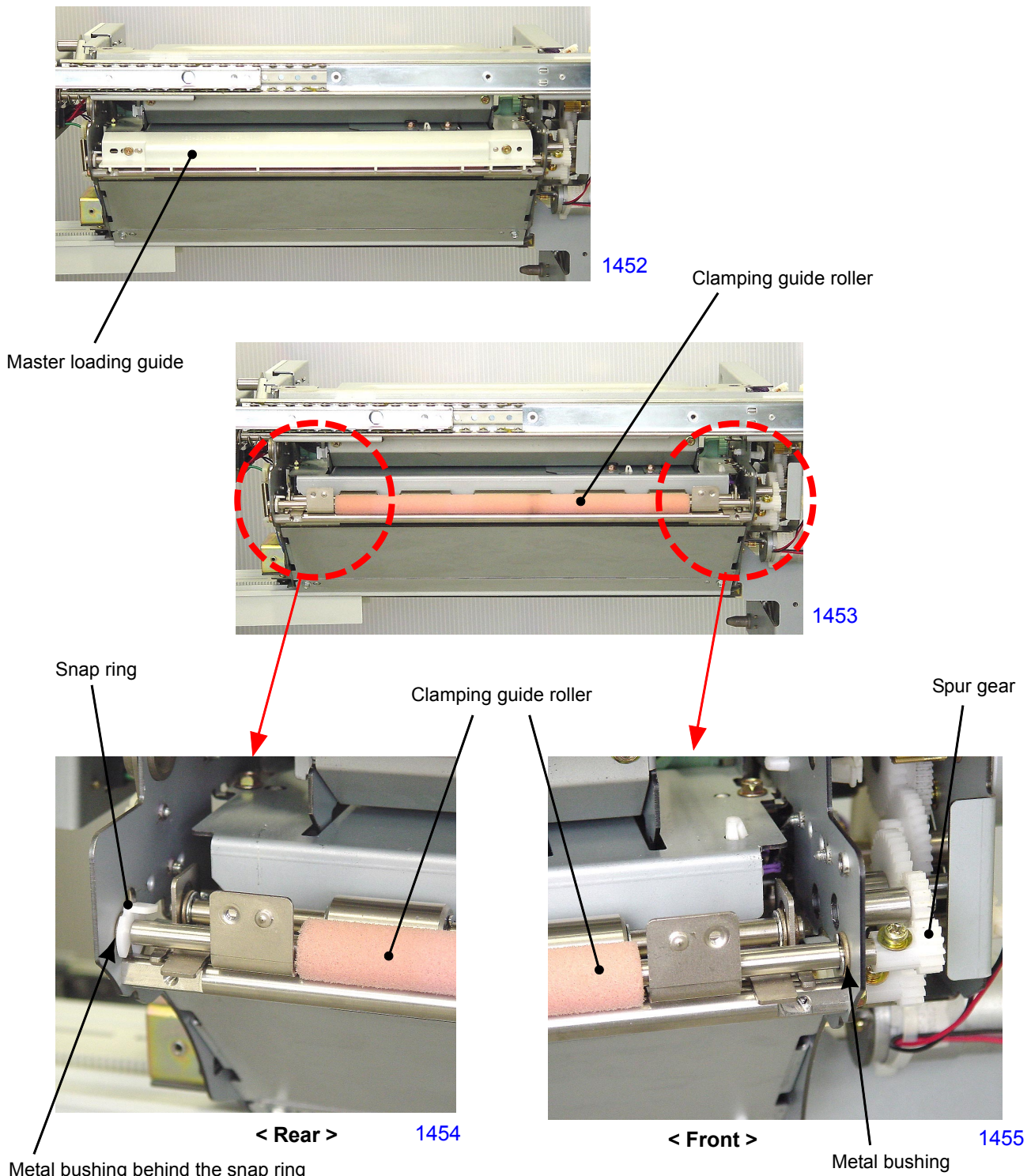
- (1) Pull out the master making unit and switch off the machine power.
- (2) Open the master making unit upper cover and remove following items.
 - Master roll
 - master making cover front
 - Write pulse motor assembly
 - Load pulse motor assembly
- (3) Unplug the sensor connector, remove screws (M3x6: 2pcs), and detach the cutter cover assembly while pulling out the wire harness from the hole on the machine side frame.



1451

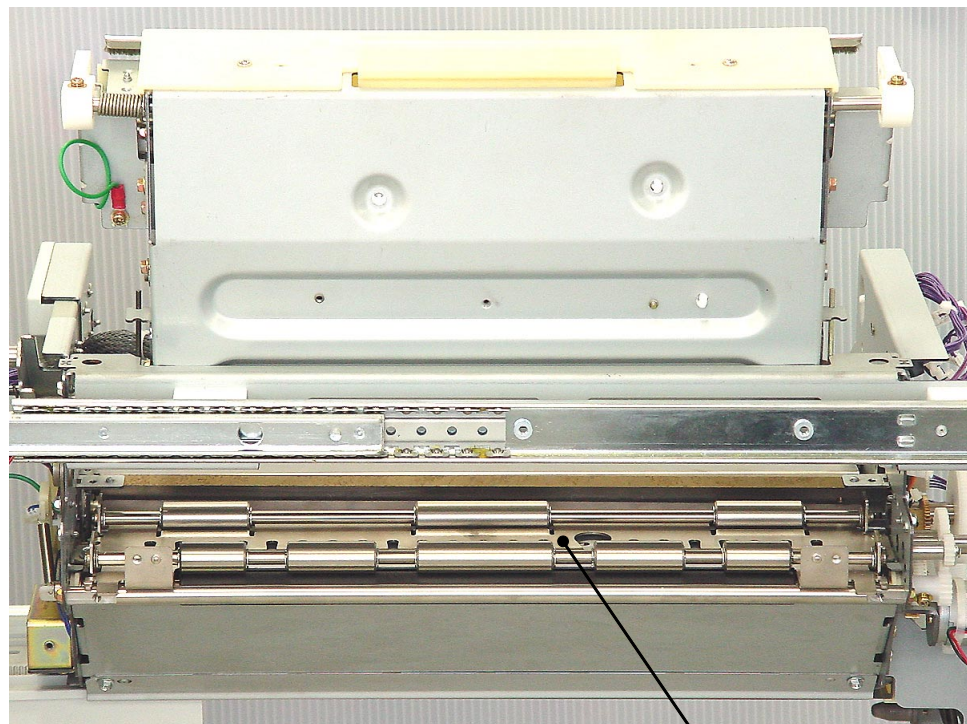
14. Removing the Clamping Guide Roller

- (1) Pull out the master making unit and switch off the machine power.
- (2) Open the master making unit upper cover and remove the master making cover front.
- (3) Detach the master loading guide by removing screws (M3x6: 2pcs).
- (4) Detach the spur gear by removing screws (M3x8: 1pc).
- (5) Detach the snap ring from the rear side, unhook the metal bushing from the rear side frame and slide it inward. Slide the clamping guide roller towards the rear and unhook the metal bushing from the front side frame. Remove the clamping guide roller from the machine.



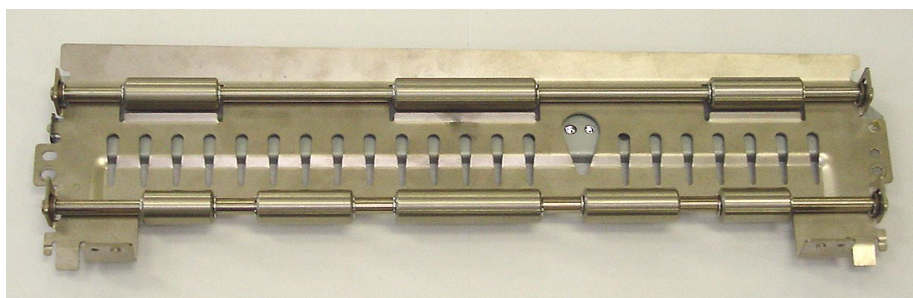
15. Removing the Cutter Guide Assembly

- (1) Pull out the master making unit and switch off the machine power.
- (2) Open the master making unit upper cover and remove following items.
 - Master roll
 - master making cover front
 - Write pulse motor assembly
 - Load pulse motor assembly
 - Cutter cover assembly
 - Master loading guide
 - Clamping guide roller
- (3) Detach the cutter guide assembly by removing screws (M3x6: 2pcs).



1456

Cutter guide assembly



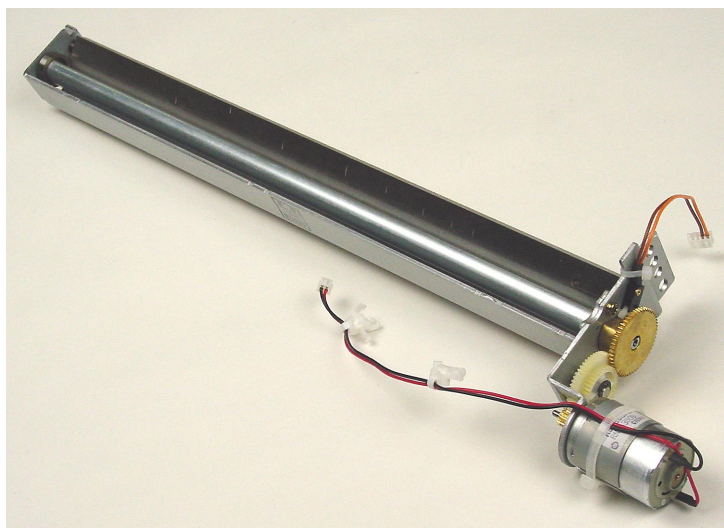
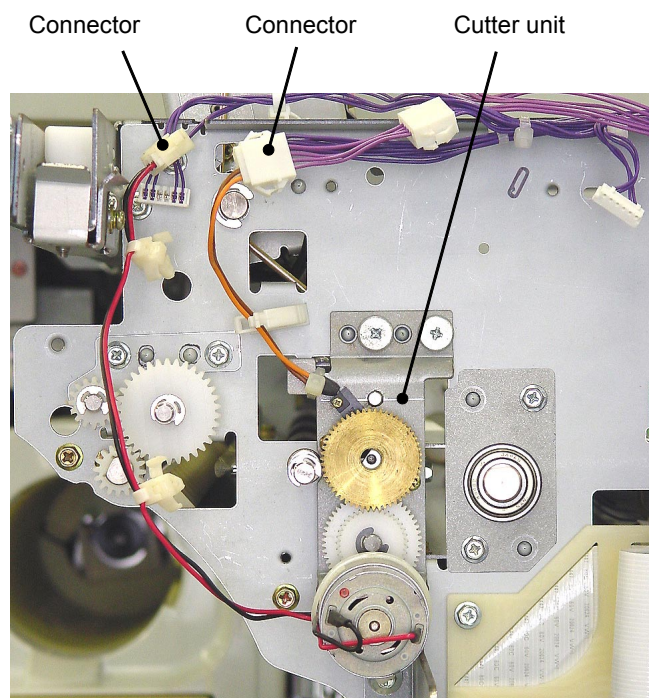
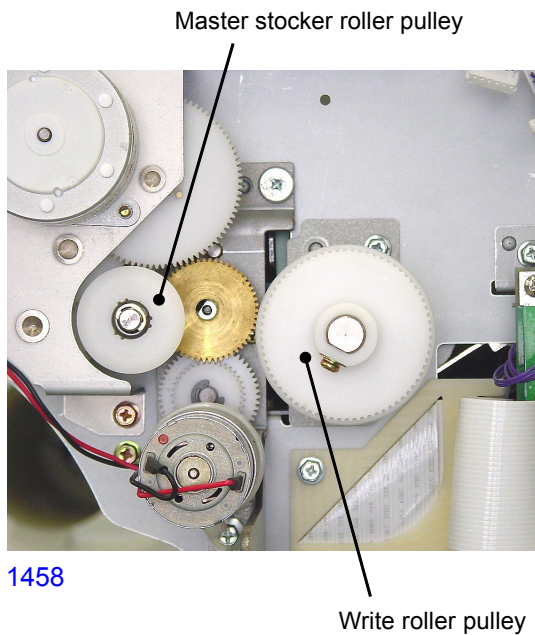
1457

< Cutter guide assembly >

16-1. Removing the Cutter Unit (Rotary cutter : A3/Ledger machines only)

- (1) Pull out the master making unit and switch off the machine power.
- (2) Open the pressure plate, remove the following components.

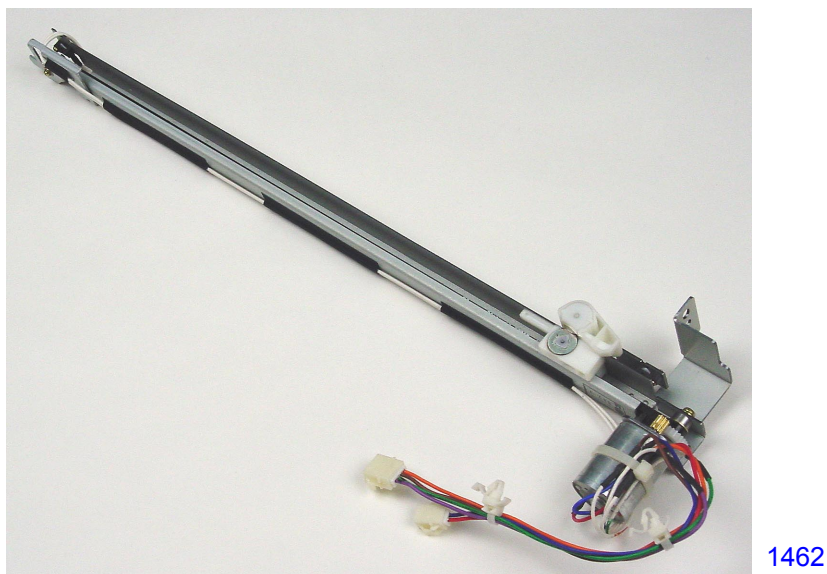
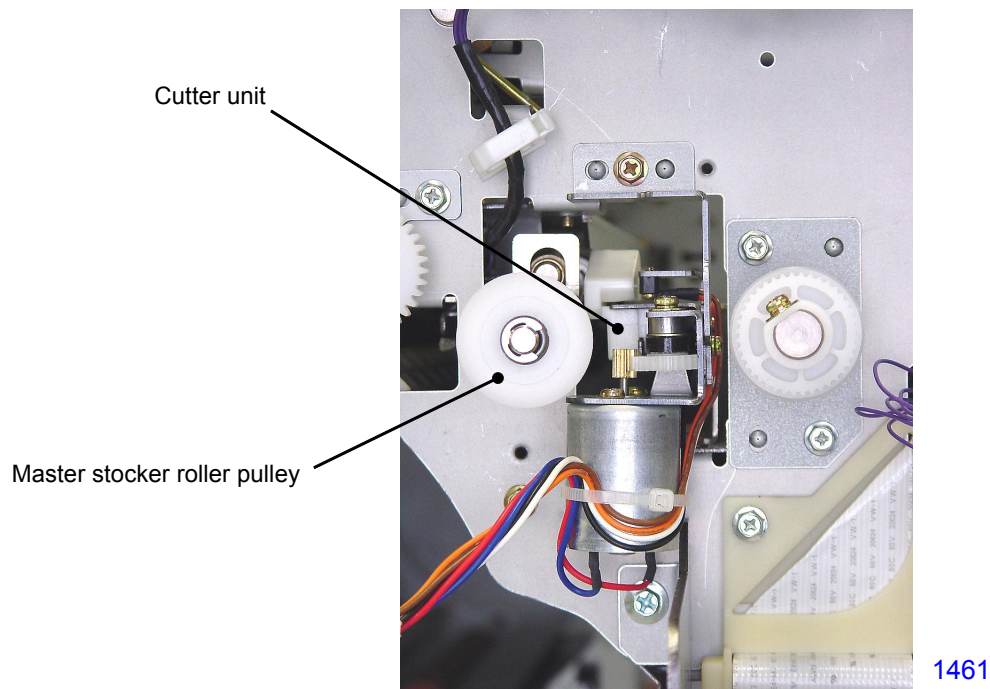
- Master roll	- Master making cover front
- Write pulse motor assembly	- Load pulse motor assembly
- Cutter cover assembly	- Master loading guide
- Load roller	- Cutter guide assembly
- Write roller pulley	- Master stocker roller pulley
- (3) Detach the cutter unit by unplugging the connectors (2 locations) and removing two shoulder screws.



< Cutter unit >

16-2. Removing the Cutter Unit (Shuttle cutter : excluding A3/Ledger machines)

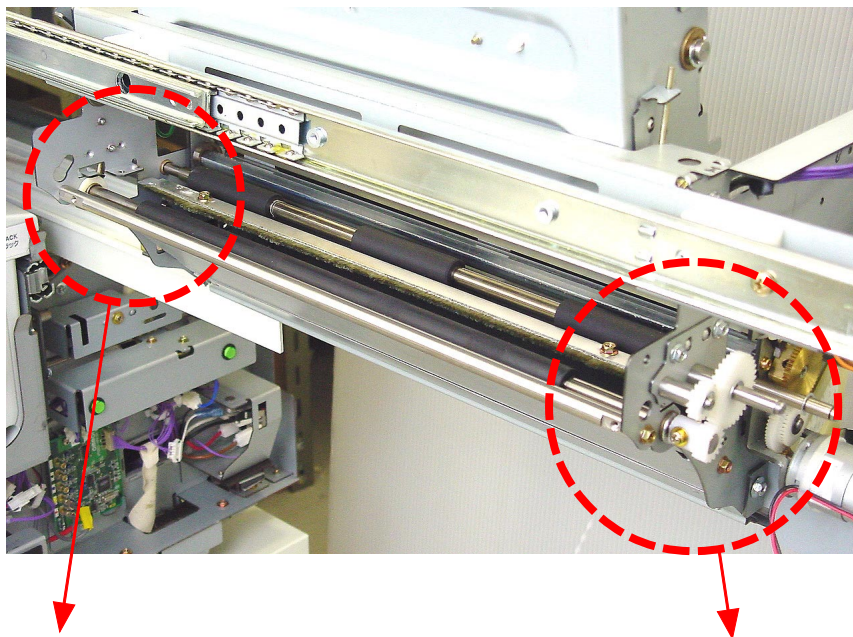
- (1) Pull out the master making unit and switch off the machine power.
- (2) Open the pressure plate, remove the following components.
 - Master roll
 - Master making cover front
 - Master guide gate
 - Write pulse motor assembly
 - Load pulse motor assembly
 - Master stocker roller pulley
- (3) Detach the cutter unit by unplugging the connectors (2 locations) and removing screw (M3x6: 1pc).



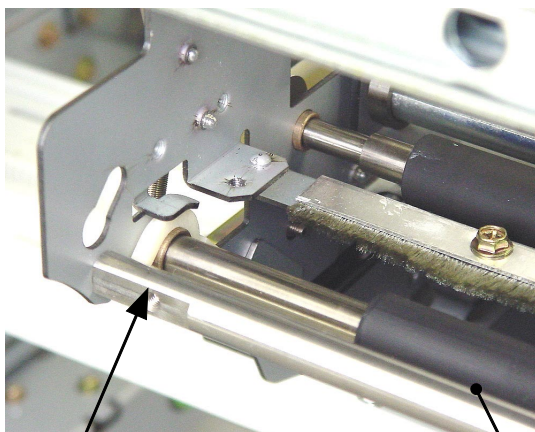
< Cutter unit >

17. Removing the Load Roller (bottom)

- (1) Pull out the master making unit, switch off the power.
 - (2) Open the compression plate, remove the following components.
 - Master roller
 - Master making cover front
 - Write pulse motor assembly
 - Load pulse motor assembly
 - Cutter cover assembly
 - Master loading guide
 - Clamping guide roller
 - Cutter guide assembly
 - (3) Detach the spur gear by removing a screw (M3x8: 1pc).
 - (4) Remove the E-rings from both sides, detach the load roller (bottom) by sliding it out to the front first, and then out through the side opening.
- * The assembly is easier if the metal busings on the ends of the shaft are not removed when detaching the load roller (bottom)..



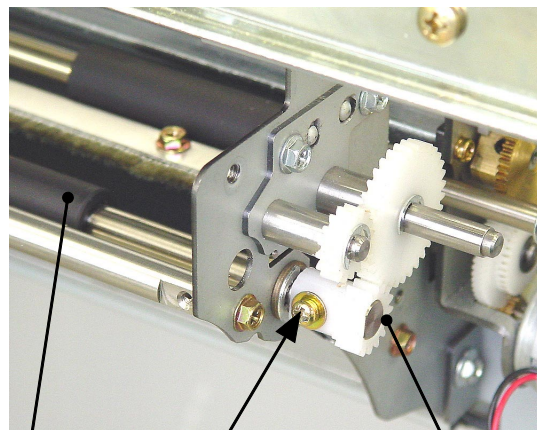
1463



1464

Bearing metal

Load roller (bottom)



1465

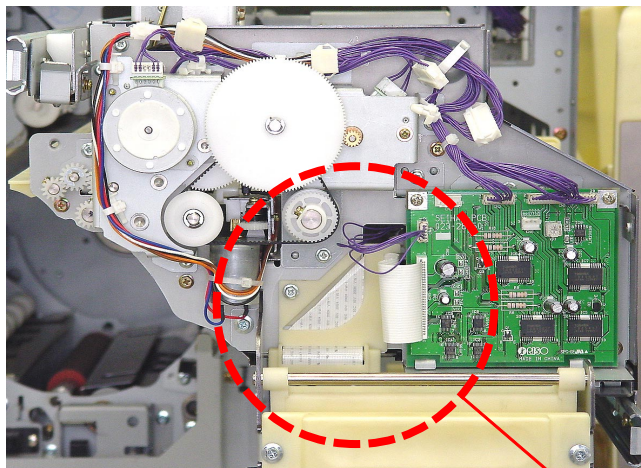
Bearing metal

Spur gear

18. Removing the Master Making Unit

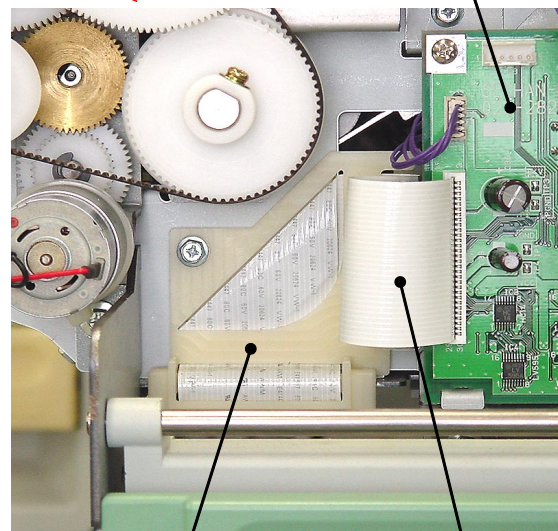
- (1) Pull out the master making unit and switch off the machine power.
- (2) Detach the master making cover front by removing screws (M4x8: 4pcs).
- (3) Unplug the master flat cable from the master making PCB.
- (4) Remove a screw (M3x8: 1pc) and detach the flat cable bracket. Then unhook the flat cable support plate from the master making unit side frame (front) and let it hang down.

- continues on next page -



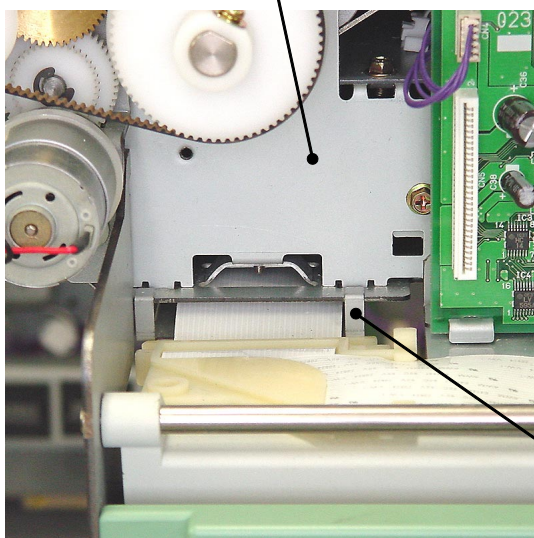
1466

Master making PCB



1467

Master making unit side frame (front)



1468

Flat cable bracket

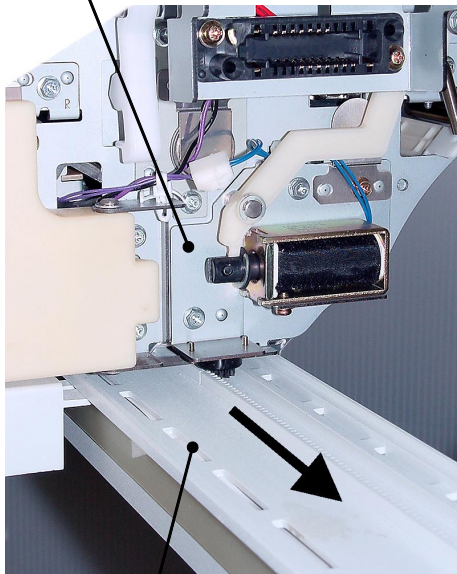
Master making unit flat cable

Flat cable support plate

- (5) Pull out the flat cable guiding box in the direction indicated by an arrow mark on the photograph below, just enough to unhook from the master making unit, and disengage it from the maser making unit.
- (6) Push both the flat cable guiding box and flat cable support plate back into the machine.
- (7) From the top of the master making unit, remove the four shoulder screws and detach the unit from the machine by lifting it.

- Precaution in assembly continues on next page -

Master making unit

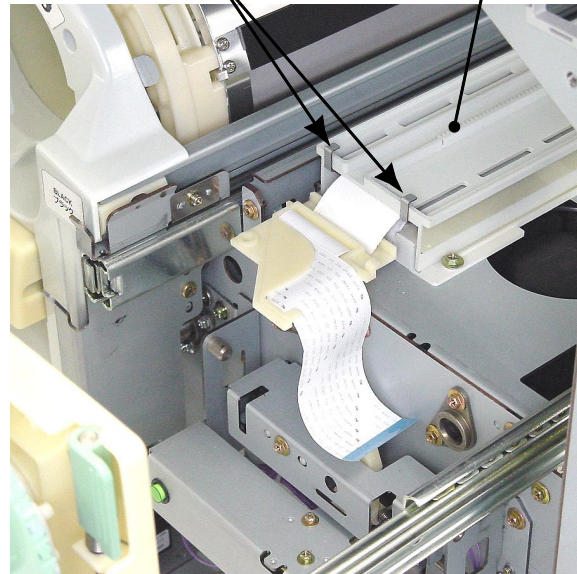


Flat cable guiding box

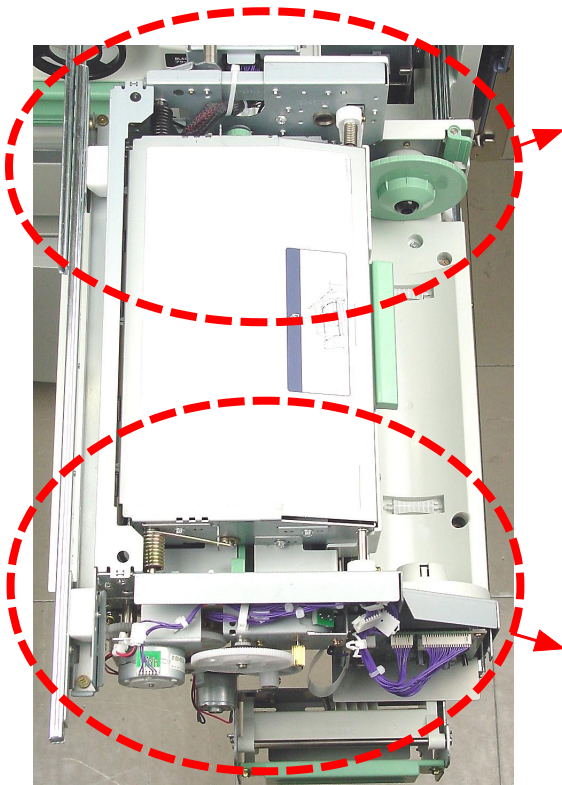
1469

Hooks on the flat cable support plate

Flat cable guiding box



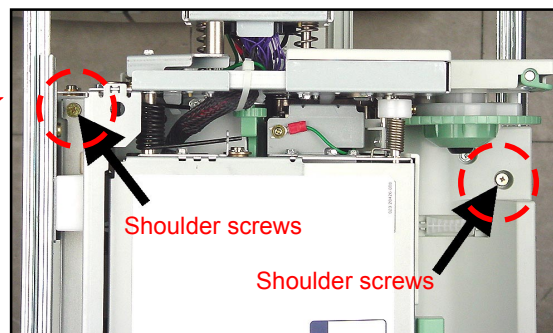
1470



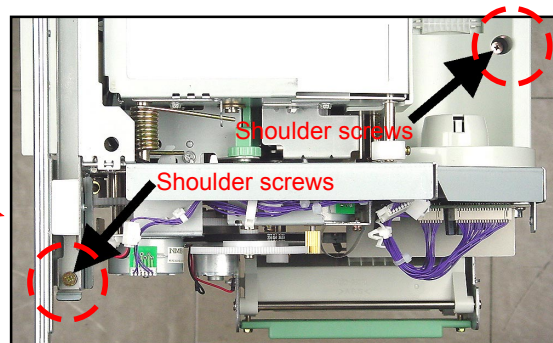
< Master making unit >

1471

< Rear >



1472

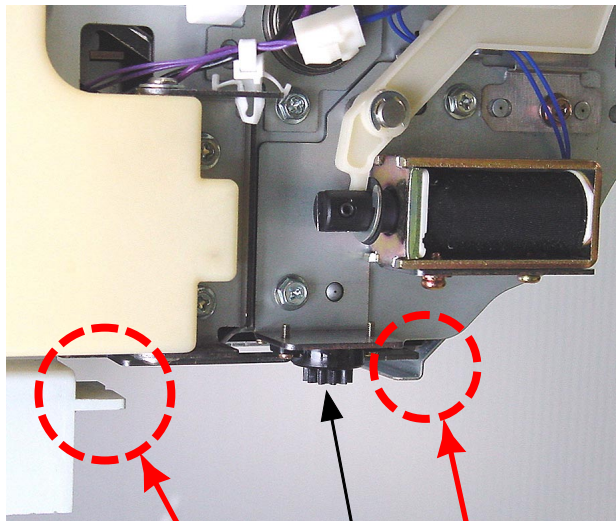


1473

< Front >

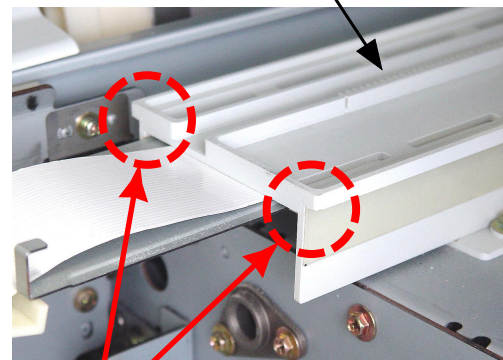
< Precautions in Disassembly >

- Insert the flanged portion of the flat cable guiding box through the support hooks on the bottom of the master making unit and engage the damper gear into the rack gear on the top surface of the flat cable guiding box.
- Place the cap portion of the flat cable bracket over the hooks on the front tip of the flat cable support plate and hook the catch on the flat cable bracket on the rectangular hole on the master making unit front frame.



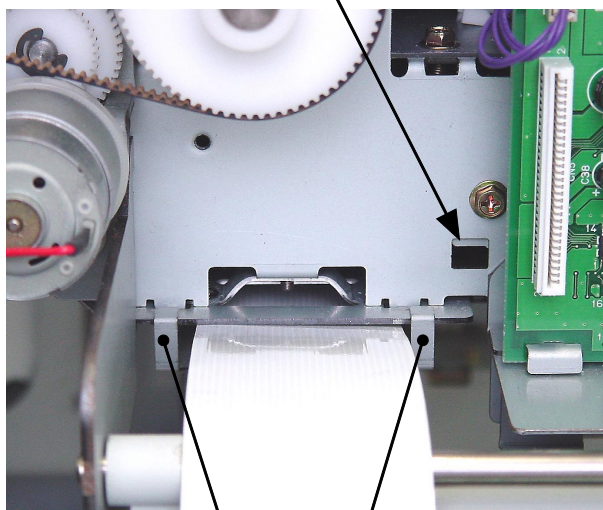
1474

Rack gear molded on the flat cable guiding box



1475

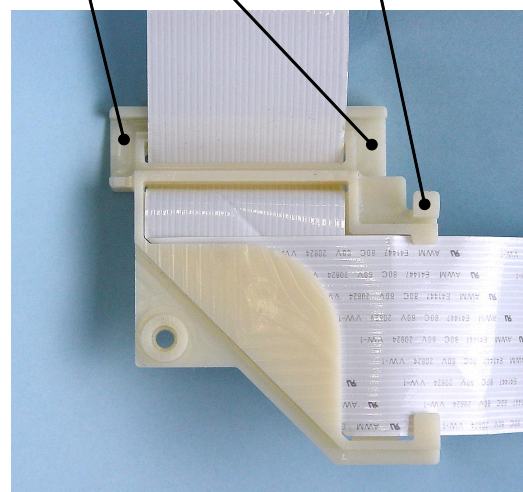
Rectangular hole to hook the flat cable bracket



1476

Cap portion on the flat cable bracket

Catch on the flat cable bracket to hook into the rectangular hole on the master making unit.

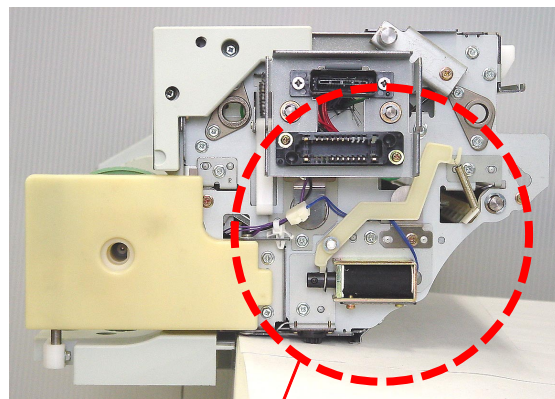


1477

19. Removing the Master Stocker Roller (bottom)

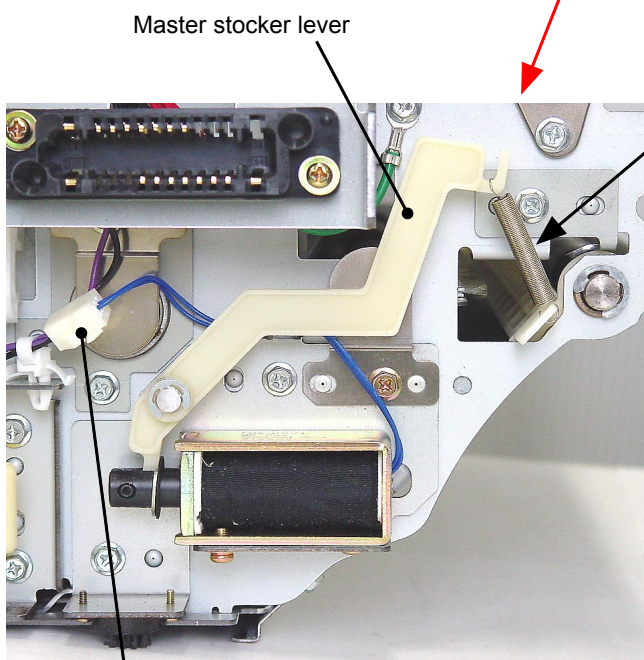
- (1) Pull out the master making unit and switch off the machine power.
- (2) Remove the following components.
 - Write pulse motor assembly
 - Load pulse motor assembly
 - Cutter cover assembly
 - Master loading guide
 - Clamping guide roller
 - Cutter guide assembly
 - master stocker roller pulley
- (3) Remove the master making unit from the machine.
- (4) Detach the master stocker spring from the master stocker lever.
- (5) Detach the master stocker solenoid assembly by disconnecting the solenoid connector and removing screws (M3x6: 2pcs).

- continues on next page -



1478

< Rear of the master making unit >

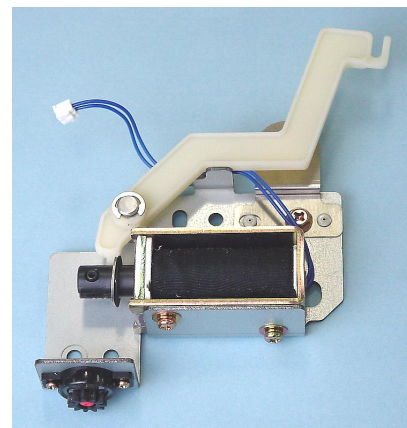


Master stocker lever

Master stocker spring

Connector

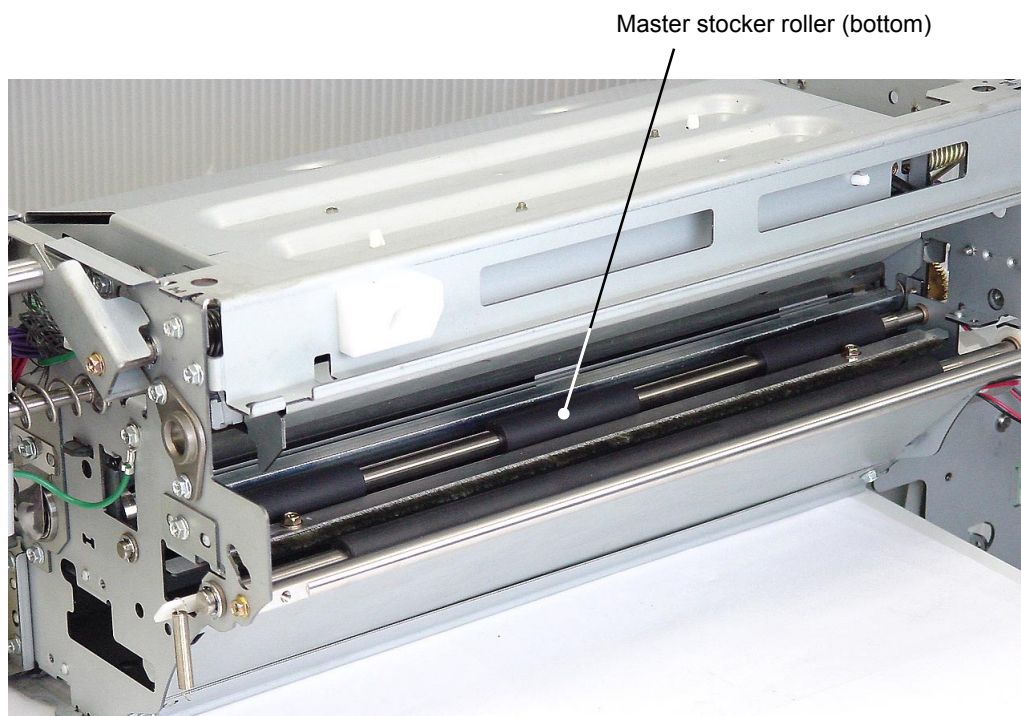
1479



1480

< Master stocker solenoid assembly >

- (6) Detach the master stocker roller (bottom) from the master making unit by removing E-rings and metal bushings from both ends of the roller.



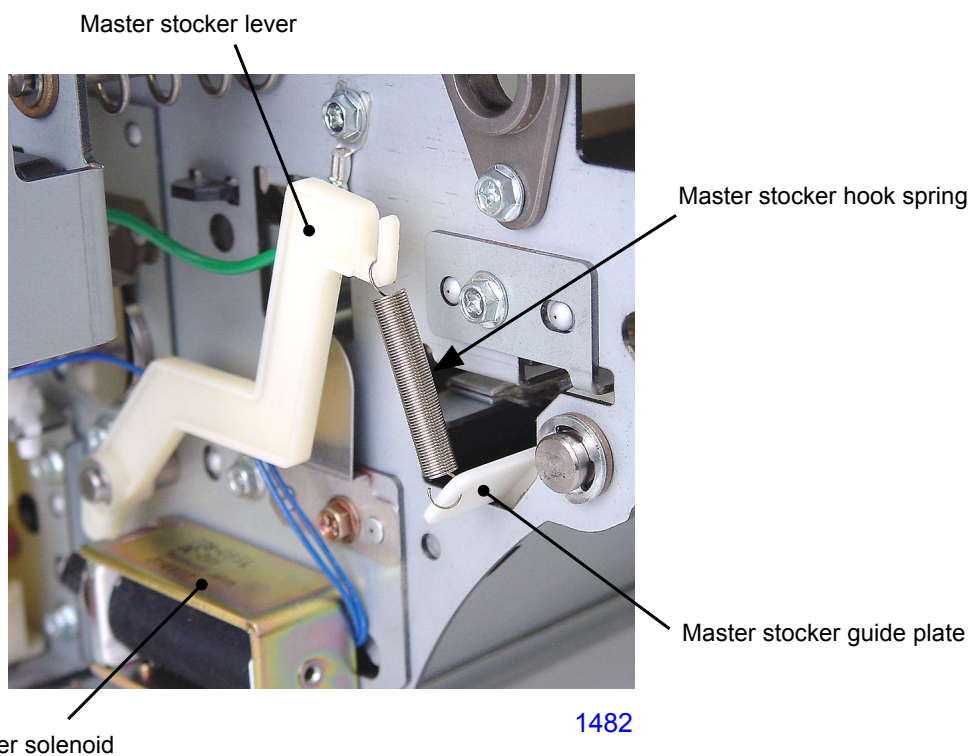
1481

< Rear >

< Front >

< Precaution in Assembly >

The movement of the master stocker guide plate may stick if the master stocker spring is hooked twisted between the master stocker lever and master stocker guide plate. After hooking the spring, check and confirm that the master stocker guide plate opens and closes smoothly by pushing the plunger of the master stocker solenoid.



1482

Adjustment

1. Thermal Power of Thermal Print Head

The thermal power must always be adjusted each time a TPH (thermal print head) is replaced.

- (1) Activate test mode No.9874 to access into the protected area test mode.
- (2) Run test mode No.1234 (TPH resistance input) and enter the resistance value imprinted on a sticker attached on each TPH. Press START key to enter the value.
- (3) Press <RESET> key to return to return back to the normal operation mode.

2. Master Clamp Range Adjustment

Checks and adjustment

- (1) Make a master and mark a short straight line at the center of the master along the edge of the clamp plate so the measurement of the mater under the clamp plate can be measured.
- (2) Open the clamp plate and measure from the leading edge of the master to the marking made. The measured length should be 18mm (plus or minus 1mm).
- (3) If the measurement is out of the specified range, make an adjustment using test mode No. 543 (master clamp range adjustment) clamp range adjustment.

* Increasing the setting by the test mode increases the master clamp amount.

3. Write Start Position Adjustment

Checks and adjustment

- (1) Run Test mode No.80 (Test print A) to make a master.
- (2) Remove the leading edge of the master by opening the clamp plate of the print drum and measure the distance from the leading edge of the master to the write start position (top of the image) to confirm that the distance is 63mm (plus or minus 1mm) measured at about the center of the master material.
- (3) If the measurement is out of the specified range, run test mode No.541 (Write start position adjustment) and make an adjustment.

* Increasing the settings by the test mode decreases the distance, moving the image up on the master material.

* Master Clamp Range Adjustment must be made before the Write Start Position Adjustment.

4. Master cut length adjustment

- (1) Make a master and measure the length of the master margin at the tail end of the master on the drum (distance from where the ink ends on the master material to the tail edge of the master). The distance should be 10.5mm (plus or minus 1.5mm).
 - (2) If the measured distance is out of the specified range, make an adjustment using test mode No.544 (master cut length adjustment).
- * Increasing the setting by the test mode increases length of the margin at the tail of the master, making the total length of each master longer.

5. Master making image Elongation and Shrinkage adjustment

Checks and adjustment

- (1) Run Test mode No.81 (Test print B) to make a master, and then make prints.
 - (2) Check by folding the printed paper and look through the top and bottom folded print.
RZ3xx series : If the horizontal line length is twice as long as the vertical line length, the adjustment is correct.
RZ2xx series : If the horizontal line and the vertical line are the same length, the adjustment is correct.
 - (3) If the ratio between the horizontal and vertical lines differ, make an adjustment using test mode No.547 (master-making speed adjustment).
- * Increasing the setting by the test mode vertically elongates the image.

6. Master making length adjustment

Checks and adjustment

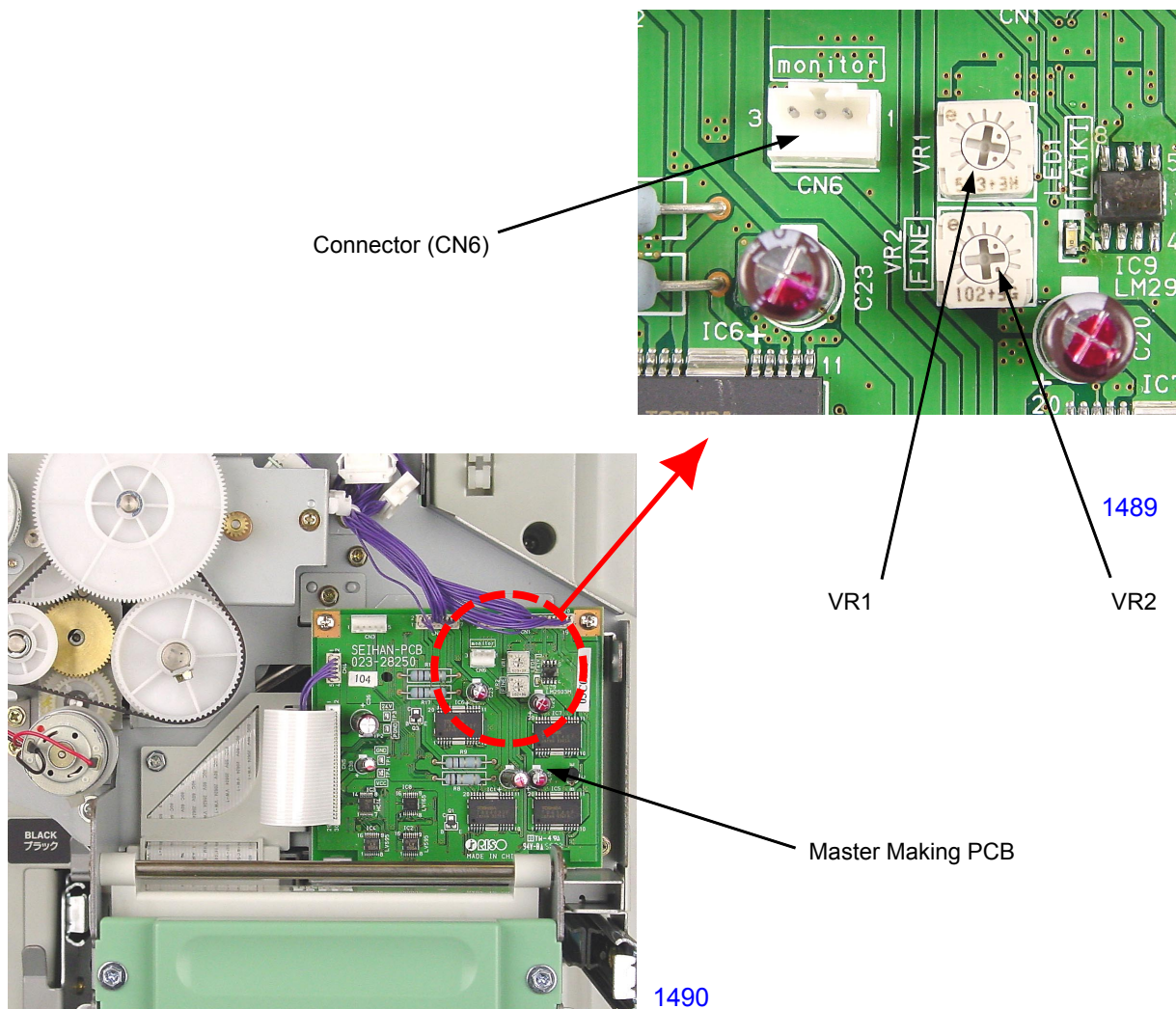
- (1) Run the Test mode No. 80 (Test print A) to make a master.
 - (2) Peel off the master from the print drum and measure the distance from the leading edge of the top image to the tailing edge of the bottom image created on the master. The distance should be 413mm.
 - (3) If the measured length is not 413mm, make an adjustment using test mode No.542 (master making length adjustment).
- * Increasing the setting by the test mode increases the master making length.

7. Master Positioning Sensor sensitivity adjustment

Make following adjustments after replacing Master positioning sensor.

Checks and adjustment

- (1) Pull out the Master making unit. If master material is set in the unit, rewind the master material back on the master roll, so no master is under the Master positioning sensor.
- (2) Detach the Master-making unit front cover.
- (3) With the machine power ON, using a multimeter, measure the voltage between pin No.1 (+) and pin No.3 (-) of connector (CN6) of the Master making PCB.
- (4) Confirm that the measured voltage is between 0.8 volt and 1.2 volts.
- (5) If the voltage is not within the above given range, slowly and gently rotate both volume dials VR1 and VR2 all the way in the clockwise direction until the dials stop.
- (6) Slowly rotate the dial VR1 (rough adjustment dial) in the counterclockwise direction until the voltage becomes about 2 volts.
- (7) Then slowly rotate the dial VR2 (fine adjustment dial) in the counterclockwise direction until the voltage comes down to the correct voltage setting within 0.8 volt to 1.2 volts. (If possible, aim for 1.0 volt.)



MEMO

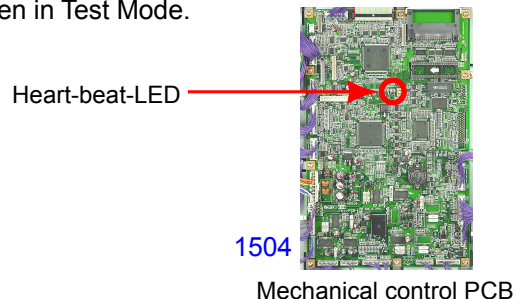
CHAPTER 15: OTHER PRECAUTIONS

Contents

1. Power-Saving (Low-Power) Mode	15-2
2. Software Downloading Procedure	15-2
3. Replacement of the Mechanical control PCB	15-3
4. Replacement of the Print drum PCB	15-4
5. Replacement of SH3 PCB	15-5
6. Battery Replacement (only on RZ3 series)	15-5
7. Print position adjustment procedures	15-5

1. Power-Saving (Low-Power) Mode

With no error status on the machine, if no operation is made on the machine for 30 seconds, the 24 volt supply to the machine components is terminated (the same when the machine is in test mode). This must be kept in mind when using a multi-meter to check the 24 volts on the machine. Whether the machine is in the Power-Saving Mode or not can be confirmed by looking at the heart-beat-LED on the Mechanical Control PCB. The blinking of the LED is fast in normal condition, and the slower in the Power-Saving Mode. The machine will not go into the Power-Saving Mode when in Test Mode.



2. Software Downloading Procedure

< Software downloading procedure for Mechanical Control PCB >

- (1) Switch OFF the machine power.
- (2) Remove the download slot cover from the top of the rear cover of the machine by removing screws (M4x8 :2pcs).
- (3) Insert the downloading card containing appropriate software for the mechanical control PCB for the specific machine model.
- (4) Turn ON the machine power. The green LED 1 aside the download slot, as well as the LED on the wake-up key on the operation panel starts to blink. The program is being downloaded.
- (5) When both the green LED 1 and LED on the wake-up key changes from blinking to a solid light, the program downloading is successfully finished.
 - * If a red colored LED aside the download slot lights and the wake-up key LED changes to a solid light, the program downloading went through an error and ended unsuccessfully. The program downloading procedure must be repeated from the start.
- (6) After the program downloading is successfully finished, switch OFF the machine power and remove the downloading card from the machine.
- (7) Mount the download slot cover back on the machine.

< Software downloading procedure for the optional SH3M PCB >

- (1) Switch OFF the machine power.
- (2) Confirm that the mechanical control PCB and optional SH3M PCB are connected.
- (3) Remove the card slot cover located on the rear cover on the paper feed side by removing a screw (M3x6: 1pc).
- (4) Insert the downloading card containing the appropriate software for the optional SH3M PCB for the specific machine model.
- (5) Turn ON the machine power. The green LED 1 aside the download slot, as well as the LED on the wake-up key on the operation panel starts to blink. The program is being downloaded.
 - * If a red colored LED aside the download slot lights and the wake-up key LED changes to a solid light, the program downloading went through an error and ended unsuccessfully. The program downloading procedure must be repeated from the start.
- (6) After the program downloading is successfully finished, switch OFF the machine power and remove the downloading card from the machine.
- (7) Mount the download slot cover back on the machine.

< Precaution in Downloading >

- Download the software for the mechanical control PCB before the software for the optional SH3M PCB.

3. Replacement of the Mechanical control PCB

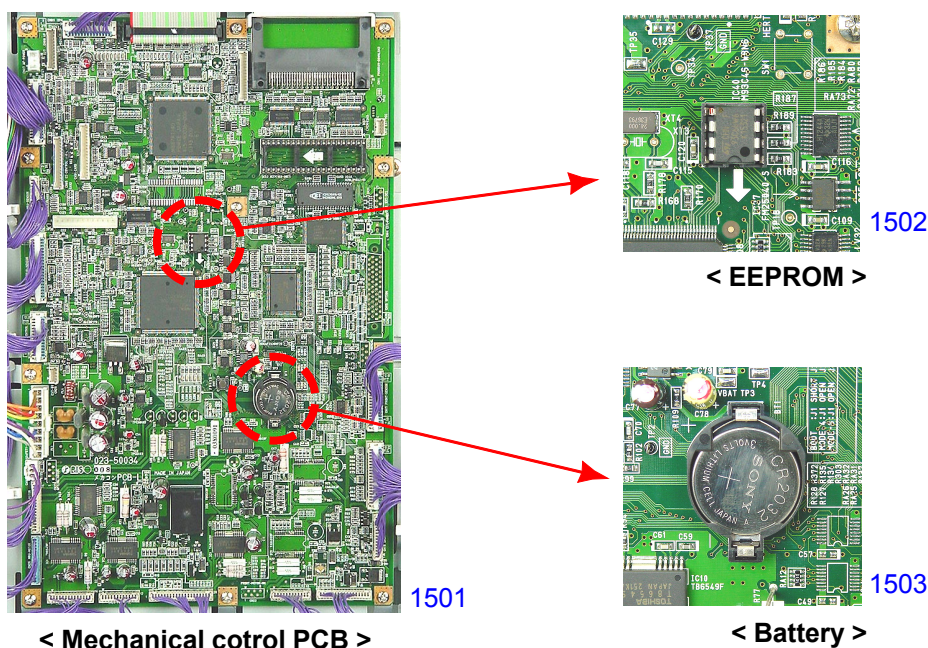
The procedure given here applies to machines with firmware version V2.00 or above. The given procedure will not work with the firmware under V2.00.

Also, the firmware version number of the existing Mechanical control PCB and the new one must match before starting the replacement procedure. Therefore, a same version firmware must be downloaded onto the new PCB when the instruction given below instructs to download the firmware onto the new PCB. If the machine firmware needs to be upgraded to a newest version, it must be done after the Mechanical control PCB replacement procedure is completely finished. If the machine firmware version between the two PCBs do not match, the given procedure may not work.

NOTE: The procedure given below is to upload the existing test mode settings onto a Compact Flash (CF) card and to download the test mode settings onto the new PCB. If the existing PCB is broken to an extent that data retrieving cannot be made, the existing test mode values needs to be input onto the new PCB manually. Therefore, It is always safer to keep the up-to-date test mode setting data for each machine readily in hand.

Also, if you are keeping REv data for each machine, do not forget to take the REv data from the damaged PCB before replacing the PCB.

1. Upload the test mode settings from the existing (damaged) Mechanical control PCB onto a CF card by following the steps given below.
 - 1-1. Turn OFF the machine power and insert CF card in the machine slot.
 - 1-2. Turn ON the machine power by starting up Test Mode.
 - 1-3. Activate test mode No.103 [System-parameter adjustment upload].
 - 1-4. Turn OFF the machine power once the test mode No.103 is completed, and remove the CF card from the machine slot.
2. Remove the existing Mechanical control PCB from the machine, and detach EEPROM and Battery from the PCB. Then attach the removed EEPROM and the Battery onto the new PCB.



3. Attach the new PCB onto the machine, insert CF card with the machine firmware and download the machine firmware onto the PCB by turning the machine power ON. Once the firmware downloading is completed, turn OFF the machine power and remove the CF card from the machine slot.
4. Turn ON the machine power by starting up Test Mode. If an error message appears, clear the message by pressing the Rest Key. Activate test mode No.9874 and then activate test mode No.1198 [Memory initialization], and turn OFF the power once the test mode No.1198 is completed.
5. Turn the machine power back ON by starting up Test Mode. If an error message appears, clear the message by pressing the Rest Key. Activate test mode No.9874. Then activate test mode No.1193 [REv storage area initialization].
6. Then do the three test modes No.110, No.111 and No.112 to clear the jam status data, user memory and test mode data memory.
7. Download the existed test mode value onto the new PCB by following given steps below.
 - 7-1. Turn OFF the machine power, and insert the CF card containing the previously uploaded test mode data.
 - 7-2. Turn ON the machine power by starting up Test Mode, and activate test mode No.105 [System-parameter adjustment download].
 - 7-3. Turn OFF the machine power once the test mode No.105 is completed, and pull out the CF card from the machine slot.
8. On model RZ3 (not necessary for RZ2 models), turn ON the machine power by starting up test mode, and input the correct machine clock time with test modes No.171, No.172, No.173, and finally activate the new time setting by test mode No.101.
9. Turn OFF the machine power and then turn the power back ON, and confirm that the machine goes into normal operating condition.

4. Replacement of the Print drum PCB

From machine firmware version V2.00 and up, it is not necessary to take memo of the test mode values memorized in the existing Print drum PCB, when replacing the PCB with a new one.

Make sure that the firmware version of the machine is V2.00 or above, before following the Print drum PCB replacement procedure. Firmware version before V2.00 does not contain the required program for this procedure.

The test mode values in the existing Print drum PCB is extracted out and downloaded onto the new PCB by following procedure.

NOTE: It is always safer to keep the up-to-date test mode setting data for each machine readily in hand just in case the existing Print drum PCB is damaged to an extent that data extraction from the PCB cannot be performed.

1. Upload the test mode values from the existing (defective) Print drum PCB onto a Compact Flash (CF) card by following procedure.
 - 1-1. With the print drum in the machine, turn OFF the machine power and place the CF card in the machine slot.
 - 1-2. Turn ON the machine power by starting up Test Mode
 - 1-3. Activate test mode No.104 [Drum-parameter adjustment upload].
 - 1-4. Turn OFF the machine power once the test mode No.104 is completed.

2. Remove the Print drum from the machine, and replace the existing Print drum PCB with a new one.
Set the Print drum in the machine.
3. Download the test mode data in the CF card onto the new Print drum PCB by following procedure.
 - 3-1. Confirming that the CF card is in the machine slot, turn ON the machine power by starting up Test Mode.
 - 3-2. Activate test mode No. 9874, and proceed to activate test mode No.1211 to input the first 4-digit numbers of the Print drum Serial Number.
 - 3-3. Activate test mode No.1212 to input the last 4-digit numbers of the Print drum Serial Number.
 - 3-4. Activate test mode No.106 [Drum-parameter adjustment download].
If error message **T97-990** appears, the Print drum serial number input by above steps 3-2 and 3-3 may have been typed in incorrectly. Repeat from above step 3-2 and continue.
 - 3-5. Turn OFF the machine power once the test mode No.106 is completed.
4. Pull out the CF card from the machine slot.
5. Turn ON the machine power and confirm that the machine goes into normal operating condition.

5. Replacement of SH3 PCB

No special instructions. Just replace the existing SH3 PCB with a new one.

6. Battery Replacement (only on RZ3 series)

Replace the battery on the mechanical control PCB with the machine power ON.

- * If the battery is removed from the machine with the machine power OFF, in certain conditions the internal clock of the machine initializes to programmed default and clock adjustment by test modes becomes necessary.

7. Print position adjustment procedures

Conduct the print positioning adjustment in the steps given below.

- (1) Adjust the clamp amount.
- (2) Adjust the writing start position.
- (3) Adjust the print start position.
- (4) Adjust the FB scanning start position.
- (5) Adjust the master making image elongation and shrinkage.
- (6) Adjust FB scanning image elongation and shrinkage.

Precaution in adjustment

Before making above test mode adjustments, it is important that all the mechanical components, such as the main drive area, paper feed area, print drum area, etc. are adjusted first.

If the machine is equipped with the optional Auto Document Feeder (AF), the test mode adjustment on the AF unit should be made after the adjustments on the FB (flatbed) scanning is made.

MEMO

CHAPTER 16: PANEL MESSAGE

Contents

1. Explanation of Panel Messages	16-2
1) Error-code displays	16-2
2. List of Error Types	16-3
3. Detailed List of Panel Messages	16-5
P01 & P02	16-5
P03 & P04	16-6
P05 & P08	16-7
P11 & P12	16-8
P13 & P14	16-9
P15 , P17 & P18	16-10
P19 , P20 & P24	16-11
P25 , P89 , P92 , & P93	16-12
P94 , P95 & P96	16-13
P97 & P98 (002 to 054)	16-14
P98 (055 to 246)	16-15
P98 (934 to 953) & P99	16-16
A01 , A02 & A04	16-17
A05 & A06	16-18
A07 , A08 , A09 & A10	16-19
A16 , A17 & A34	16-20
B01 , B22 , B23 & B24	16-21
B31 , B32 , B33 & B34	16-22
C01 , C02 , C03 & C04	16-23
D01 , D02 & D03	16-24
D04 , D05 & D07	16-25
D08 , D09 , D11 & D13	16-26
D17 , D18 , D19 & D22	16-27
E01 & E02	16-28
F01 , F02 , F03 & F05	16-29
F10 , F21 , F22 & F37	16-30
F50 , F54 , F55 , F58	16-31
H01 , H02 , H03 , H04 , H05 , H06	16-32
J**	16-33

1. Explanation of Panel Messages

Overview of the messages

1) Error-code displays

If an error occurs, an error message is displayed together with LED lamp and an error code to indicate the problem to the operator.

Error-code displays consist of an “error type” indicating the type of error and an “error-point number” indicating the error situation.

Example: P01-520 P01: Error type
 520: Error point

1. Error type

The order of error priority is as specified below.

Error Type	Description
P	Serviceman-call error
A	Jam error
B	Option error
C	Consumable error
D	Set check error
E	Warning (Serviceman call)
F	Warning (Other)
J	Paper/Original jam error
H	Parameter value error

2. Error point

The error-point classification are as specified below.

Error Point	Description
0XX	System (hardware, software, communication), panel
1XX	Scanning section (scanner, AF), image processing
2XX	Master making section
3XX	Master-disposal section
4XX	Paper-feed/ejection section
5XX	Print-drum area
6XX	Printing adjustment section (vertical, horizontal, density)
7XX	Accessories

2. List of Error Types

Error Type	Description
P01	Main motor lock
P02	Elevator motor lock
P03	Clamp motor lock
P04	Overflow
P05	Print-positioning pulse-motor lock
P08	Communication error with CI
P11	Print pressure pulse-motor lock
P12	Master disposal section motor lock
P13	Cutter motor lock
P14	Flatbed error
P15	AF error
P17	Solenoid counter not connected
P18	Drum-lock solenoid lock
P19	Thermal-pressure motor lock
P20	Paper-ejection-section motor lock
P24	Inking motor lock
P25	No battery error
P89	Master compression plate error
P92	Drum EEPROM write error
P93	NET-C hardware error
P94	Call service error: TPH
P95	FRAM error
P96	Data not input
P97	PC card access error
P98	Hardware error
P99	Software error

Error Type	Description
A01	Master feed error
A02	Master loading error
A04	Master-removal error
A05	Master present in the master-disposal area
A06	Check paper-feed tray
A07	Paper-feed error
A08	Paper jam on print drum
A09	Paper-ejection error
A10	AF original feed error
A16	Awaiting for the master to be removed from the drum
A17	Cutter error
A34	Requesting for master to be reset

Error type	Description
B01	Keycard counter: No card
B22	Job separator: Power OFF
B23	Job separator: No tape
B24	Job separator: Tape jam
B31	Network cable not connected
B32	NIC - communication error
B33	IP address setup error
B34	Linked printer: No toner

Error Type	Description
C01	Replace ink cartridge
C02	Replace master roll
C03	Master disposal box full
C04	No paper on the paper feed tray

Error type	Description
D01	Print drum not set
D02	Incorrect print drum
D03	Ink cartridge not set
D04	Incorrect ink cartridge
D05	Master not set
D07	Master-disposal box not set
D08	Master making unit not set
D09	Master making unit cover not closed
D11	Front cover not closed
D13	Rear cover not closed
D17	Incorrect master roll
D18	Print cylinder (drum) is ready for removal
D19	Master making unit is ready for removal
D22	Print cylinder (drum) removal command

Error type	Description
E01	Replace battery
E02	Maintenance call

Error type	Description
F01	No master on print cylinder (drum)
F02	Master image larger than paper size: 1
F03	Multi-up printing - Incorrect paper size
F05	Print quantity under "minimum print quantity"
F10	Master image larger than paper size: 2
F21	Next original not set on AF for multi-up printing
F22	Next original not set on FB for multi-up printing
F37	AF cannot be used in book mode
F50	Linked printer error
F54	Linked printer error - No paper
F55	Linked printer error - Job interrupted
F58	Printing from Linked Printer Disabled - Initializing NET-C

Error type	Description
J**	Paper/Original jam error

Error type	Description
H01	Parameter value error: Ink color setting error
H02	Parameter value error: Print density adjustment (ink) error
H03	Parameter value error: Test printing print-density adjustment (ink) error
H04	Parameter value error: Master-making density setting error
H05	Parameter value error: Print density adjustment (master) error
H06	Parameter value error: Test printing print-density adjustment (master) error

3. Detailed List of Panel Messages

Service call errors

Error Type	P01 [Main motor lock]
Description	P01-xxx !!System Error!! Press Reset Key If Recovery has Failed, Call Service
To reset display	Press Reset Key
Error Point	Error Conditions
520	Main encoder sensor does not go ON/OFF within 10 milliseconds after the main motor activates.
521	B-positioning sensor status does not change even after 3,033 pulses after the main motor activates.
524	Clamp unit is not at the home position while the print drum is in operation (except during master disposal).
537	Print drum failed to stop at position B. (over-run)
538	Print drum is not locked during operation. (Drum lock sensor: OFF)

Error Type	P02 [Elevator motor lock]
Description	P02-xxx !!System Error!! Press Reset Key If Recovery has Failed, Call Service
To reset display	Press Reset Key or turn OFF and ON the power.
Error Point	Error Conditions
400	Both the upper and lower limit sensors are ON at the same time.
401	Overload current was detected in the elevator motor.
404	The lower-limit sensor does not go OFF within 2 seconds after the elevator motor operates in the raising direction from the lower-limit position.
405	The upper-limit sensor does not go ON within 12 seconds after the elevator motor operates in the raising direction.
406	The upper-limit sensor does not go OFF within 2 seconds after the elevator motor operates in the lower direction from the upper-limit position.
407	The lower-limit sensor does not go ON within 12 seconds after the elevator motor operates in the lowering direction.
408	The upper-limit sensor is OFF continuously for over 2 seconds during operation of the elevator servo action to raise the feed tray.

Error Type	P03 [Clamp motor lock]
Description	P03-xxx !!System Error!! Press Reset Key If Recovery has Failed, Call Service
To reset display	Press Reset Key
Error Point	Error Conditions
500	Clamp sensor A is OFF after the completion of the clamp unit initialization or home positioning movement.
501	Clamp sensor B does not change within 1 second from the time the clamp motor operates in the forward direction.
502	Clamp sensor B does not change within 1 second from the time the clamp motor operates in the reverse direction.
503	Clamp sensor A does not go ON within 3 seconds when the clamp unit makes initialization movement.
504	At the start of Clamp plate open/close action, the detection sequence of clamp-sensors A & B are abnormal.
505	At the start of print drum Position-A compensation movement, the detection sequence of clamp-sensors A & B are abnormal.
506	At the start of Clamp unit Home-positioning movement, the detection sequence of clamp-sensors A & B are abnormal.
507	Clamp sensor A is ON after the clamp release action is completed.
508	Clamp sensor A is ON after the A-position compensating movement is completed.
545	Clamp unit is not in the home position while the print drum is in movement (cause due to the clamp motor).

Error Type	P04 [Ink overflow]
Description	P04-xxx !!System Error!! Press Reset Key If Recovery has Failed, Call Service
To reset display	Press Reset Key after correcting the ink overflow condition. (No ink on the ink overflow sensor.)
Error Point	Error Conditions
513	The overflow sensor is ON for a set number of times in succession during the 10-millisecond-interval overflow-sensor check.

Error Type	P05 [Print positioning pulse motor lock]
Description	P05-xxx !!System Error!! Press Reset Key If Recovery has Failed, Call Service
To reset display	Press Reset Key or turn the power OFF and ON.
Error Point	Error Conditions
603	The vertical-centering sensor does not switch ON even when the vertical-positioning pulse motor activated in the image-down direction for 5 seconds during vertical home positioning movement.
604	The vertical-centering sensor does not switch OFF even when the vertical-positioning pulse motor activated in the image-up direction for 5 seconds during vertical home positioning movement.
605	Even though the vertical positioning motor stopped according to the vertical centering sensor detection, the stopping position does not correspond with the programmed position. (GA control error).
612	The print positioning key is pressed with vertical-print-position information undefined.

Error Type	P08 [Communication error with CI]
Description	P08-xxx !!System Error!! Press Reset Key If Recovery has Failed, Call Service
To reset display	Turn the power OFF and ON.
Error Point	Error Conditions
951	Incorrect RINC format file.

Error Type	P11 [Print pressure pulse motor lock]
Description	P11-xxx !!System Error!! Press Reset Key If Recovery has Failed, Call Service
To reset display	Press Reset Key or turn the power OFF and ON.
Error Point	Error Conditions
600	Print pressure HP sensor does not switch ON within 5 seconds after the print pressure pulse motor activated towards higher pressure during home positioning operation.
601	Print pressure HP sensor does not switch OFF within 5 seconds after the print pressure pulse motor activated towards lower pressure during home positioning operation.
602	Even though the print pressure control pulse motor stopped according to the print pressure HP sensor detection, the stopping position does not correspond with the programmed position. (GA control error).
614	Print pressure pulse motor does not complete its movement even after 7 seconds from the print pressure HP movement to move -1000 pulses.

Error Type	P12 [Master-disposal-section motor lock]
Description	P12-xxx !!System Error!! Press Reset Key If Recovery has Failed, Call Service
To reset display	Press Reset Key.
Error Point	Error Conditions
300	Overload current was detected in the master removal motor.
301	Master compression motor lock when moving compression plate up.
305	Master compression sensor does not go ON within 6.5 seconds after the master compression motor operates in the return direction.
306	Master compression sensor does not go OFF within 2 seconds after the master compression motor operates in the compress direction.
307	Master compression plate maximum position is not detected within 6.5 seconds after the master compression motor operates in the compress direction.
309	Master-compression-motor encoder sensor count did not change as the master compression motor activated in the compress direction and moved out from the home position.
316	Master-compression-motor encoder sensor count did not change within 10 milliseconds after the master compression motor activated.

Error Type	P13 [Cutter motor lock]
Description	P13-xxx !!System Error!! Press Reset Key If Recovery has Failed, Call Service
To reset display	Press Reset Key.
Error Point	Error Conditions
203	Cutter HP switch does not go OFF within 100 milliseconds after the cutter motor is activated.
204	Cutter HP switch does not go ON within 300 milliseconds after the cutter motor is activated.
205	Master-positioning sensor is ON when the print drum rotates through the preset angle following master cutting.
221	Cutter HP SW and cutter stop position SW are both ON at same time (shuttle cutter).
222	Cutter HP switch does not go ON within 450 milliseconds after the cutter home positioning operation started.
231	Cutter HP SW does not go OFF within 500millisecond after the cutter moved out from the HP position (shuttle cutter).
232	Cutter stop position SW does not go ON within 2 seconds after the cutting motion was made (shuttle cutter).
233	Cutter stop position SW does not go OFF within 500 milliseconds after the cutter returns towards the HP position during initializing movement (shuttle cutter).
234	Cutter HP SW does not go ON within 2 seconds after the cutter leaves out of the cutter stop position SW during initializing movement (shuttle cutter).

Error Type	P14 [Flatbed error]
Description	P14-xxx !!System Error!! Press Reset Key If Recovery has Failed, Call Service
To reset display	Press Reset Key.
Error Point	Error Conditions
114	Incorrect main-unit data.
115	The scanner operation is not completed within the set time.
116	Timeout error for black shading compensation.
117	Timeout error for white shading compensation.
118	Software error
123	Offset adjustment not completed within set time.
124	Gain adjustment not completed within set time.
125	Offset adjustment not completed.
126	Gain adjustment not completed.
135	Malfunction detected during offset adjustment.
136	Malfunction detected during offset adjustment.
137	Malfunction detected during black shading compensation.
138	Malfunction detected during white shading compensation.
170	Even though the read pulse motor stopped according to the sensor detection, the stopping position does not correspond with the programmed position. (GA control error).

Error Type	P15 [AF error]
Description	P15-xxx !!System Error!! Press Reset Key If Recovery has Failed, Call Service
To reset display	Turn OFF and ON the power.
Error Point	Error Conditions
004	Communication error with AF-CPU.
110	ABC (auto-base-control) timeout. The original does not move from the ABC scanning position on the AF unit.
111	Operation command was made to the AF unit without 24 volts supplied to the AF unit.
130	Timeout error in receiving reply from the AF unit after command signal was sent from the Riso printer to the AF unit.
131	Riso printer received an undefined command from the AF unit.
132	Riso printer detected communication sequence error from the AF unit.
133	Communication error with AF unit (ACK or NAK error).
134	Riso printer could not send command to the AF unit within the set time.
160	AF unit detection signal went OFF while the AF unit is in operation.
161	AF unit not connected.

Error Type	P17 [Solenoid counter not connected]
Description	P17-xxx !!System Error!! Press Reset Key If Recovery has Failed, Call Service
To reset display	Connect the solenoid counter.
Error Point	Error Conditions
020	Solenoid counter is not connected.

Error Type	P18 [Drum-lock-solenoid lock]
Description	P18-xxx !!System Error!! Press Reset Key If Recovery has Failed, Call Service
To reset display	Press Reset key
Error Point	Error Conditions
531	Print drum lock sensor is still ON even after 100 milliseconds after the print drum lock solenoid is activated.

Error Type	P19 [Thermal-pressure motor lock]
Description	P19-xxx !!System Error!! Press Reset Key If Recovery has Failed, Call Service
To reset display	Press Reset key
Error Point	Error Conditions
207	TPH pressure sensor does not go OFF within 2 seconds after the thermal-pressure motor activates in the decompressing direction, or during home positioning operation.
208	TPH pressure sensor does not go ON within 2 seconds after the thermal-pressure motor activates in the decompressing direction.
216	TPH pressure sensor does not go OFF within 2 seconds after the thermal-pressure motor activates in the compressing direction.
217	TPH pressure sensor does not go ON within 2 seconds after the thermal-pressure motor activates in the compressing direction.

Error Type	P20 [Paper-ejection-section motor lock]
Description	P20-xxx !!System Error!! Press Reset Key If Recovery has Failed, Call Service
To reset display	Press Reset key
Error Point	Error Conditions
416	Overload current was detected in the paper-ejection motor.
437	Paper-ejection FG sensor status does not change within 10 milliseconds after the paper-ejection motor is activated.

Error Type	P24 [Inking motor lock]
Description	P24-xxx !!System Error!! Press Reset Key If Recovery has Failed, Call Service
To reset display	Press Reset key or turn the power OFF and ON.
Error Point	Error Conditions
539	Inking-motor FG sensor status does not change within 20 milliseconds after the inking-motor is activated.

Error Type	P25 [No battery error]
Description	P25-xxx !!Low Battery!! Call Service
To reset display	Replace the battery.
Error Point	Error Conditions
026	Battery voltage is too low when the power is turned ON. (Readjust the machine clock after replacing the battery.)

Error Type	P89 [Master compression plate: incorrect position]
Description	P89-xxx !!System Error!! Press Reset Key If Recovery has Failed, Call Service
To reset display	Turn the power OFF and ON.
Error Point	Error Conditions
350	The clamp unit is in the clamp-plate open position and also the master compression plate is not in the HP position when the print drum starts its movement. (This is to protect the machine parts.)

Error Type	P92 [Drum EEPROM write error]
Description	P92-xxx !!System Error!! Press Reset Key If Recovery has Failed, Call Service
To reset display	Press Reset Key
Error Point	Error Conditions
570	EEPROM on the print drum PCB is being accessed while the print drum is in releasing action from the machine.

Error Type	P93 [NET-C hardware error]
Description	P93-xxx !!System Error!! Press Reset Key If Recovery has Failed, Call Service
To reset display	Turn the power OFF and ON.
Error Point	Error Conditions
932	No reply from the NET-C network interface card while accessing to the network interface card.
933	No response from NET-C for 90 seconds during NET-C initialization.

Error Type	P94 [Call service error: TPH]
Description	P94-xxx !!System Error!! Press Reset Key If Recovery has Failed, Call Service
To reset display	Turn the power OFF and ON.
Error Point	Error Conditions
225	TPH code does not match with the machine code when the power is turned ON with the master-making unit in operating position or when the master-making unit is inserted in operating position while the power is ON.

Error Type	P95 [FRAM error]
Description	P95-xxx !!System Error!! Press Reset Key If Recovery has Failed, Call Service
To reset display	Turn the power OFF and ON.
Error Point	Error Conditions
059	Machine serial-number information sent from SH-PCB does not match with the machine serial number information in the MCTL PCB.

Error Type	P96 [Data not input]
Description	P96-xxx !!System Error!! Press Reset Key If Recovery has Failed, Call Service
To reset display	Input the parameters using test mode.
Error Point	Error Conditions
171	TPH resistance value not input.
172	Scanner adjustment not completed.
433	Paper size width potentiometer test-mode setting is not completed.
452	The A/D parameters for paper feed tray potentiometer for the adjusting width of 105mm and 297 mm are smaller than normal.
569	Either the print drum color information or ink category information is still not input.
613	Print pressure data missing.
972	REv data storage area is not initialized.

Error Type	P97 [PC card access error]
Description	P97-xxx !!System Error!! Press Reset Key If Recovery has Failed, Call Service
To reset display	Press Reset Key
Error Point	Error Conditions
939	PC card access error: PC card not set.
940	PC card access error: PCMCIA card information error.
941	PC card access error: CF card device error.
942	PC card access error: Same file already exists.
943	PC card access error: Not formatted.
944	PC card access error: Media ID error.
945	PC card access error: Media error (cannot access the PC card).
946	PC card access error: Media error (not enough blank space available on CF card).
990	PC card access error: Specified file not found on the selected drive.
991	PC card access error: Accessed to the file not opened.
992	PC card access error: File information folder is already in use.
993	PC card access error: Incorrect setting on the readout address when sending data to the machine.
994	PC card access error: Unsuccessful file deleting.

Error Type	P98 [Hardware error]
Description	P98-xxx !!System Error!! Press Reset Key If Recovery has Failed, Call Service
To reset display	Turn power OFF and ON.
Error Point	Error Conditions
002	No reply from SH3M PCB. If SH3M PCB signal is detected at machine power ON, but if the PCB communication terminates and P98-069 error is detected, the error point is rewrote to 002.
005	Hardware error
006	FRAM check-sum error
025	Defective RF PCB (Unsuccessful initial communication with RF PCB).
034	Unable to write on EEPROM on the machine. (Cannot access EEPROM).
035	CRC error on EEPROM on the machine (Defective EEPROM data).
038	Information between the PCB and EEPROM does not match.
039	Incorrect EEPROM.
053	Unsuccessful data readout from the Memory setting (program, mode, user paper).
054	Unsuccessful data writing of the Memory setting (program, mode, user paper).

Error Type	P98 [Hardware error]
Description	P98-xxx !!System Error!! Press Reset Key If Recovery has Failed, Call Service
To reset display	Turn power OFF and ON.
Error Point	Error Conditions
055	Machine code number sent from SH3M2 PCB does not match with that from the Mechanical control PCB.
063	Test mode setting is beyond the adjustable range.
064	Communication error between SH PCB and MCTL PCB.
065	Communication error between SH PCB and MCTL PCB (01) - on MCTL PCB side.
067	Communication error between SH PCB and MCTL PCB (03) - on MCTL PCB side.
068	Communication error between SH PCB and MCTL PCB (04) - on MCTL PCB side.
069	Communication error between SH PCB and MCTL PCB (05) - on MCTL PCB side.
070	Communication error between SH PCB and MCTL PCB (06) - on MCTL PCB side.
071	Communication error between SH PCB and MCTL PCB (07) - on MCTL PCB side.
072	Communication error between SH PCB and MCTL PCB (08) - on MCTL PCB side.
073	Communication error between SH PCB and MCTL PCB (09) - on MCTL PCB side.
074	Communication error between SH PCB and MCTL PCB (10) - on SH PCB side.
075	Communication error between SH PCB and MCTL PCB (11) - on SH PCB side.
076	Communication error between SH PCB and MCTL PCB (12) - on SH PCB side.
077	Communication error between SH PCB and MCTL PCB (13) - on SH PCB side.
078	Communication error between SH PCB and MCTL PCB (14) - on SH PCB side.
079	Communication error between SH PCB and MCTL PCB (15) - on SH PCB side.
080	Communication error between SH PCB and MCTL PCB (16) - on SH PCB side.
081	Communication error between SH PCB and MCTL PCB (17) - on SH PCB side.
082	Communication error between SH PCB and MCTL PCB (18) - on SH PCB side.
083	Communication error between SH PCB and MCTL PCB (19) - on SH PCB side.
084	Communication error between SH PCB and MCTL PCB (20) - on SH PCB side.
098	Machine serial number information on EEPROM does not match with that of FRAM.
119	Defective image PCB (memory check error on the image processing IC).
120	Timeout on the scanner serial communication.
129	Defective scanner gate array PCB (memory check error on the gate array).
245	Timeout error on master transfer during master-making (related to Write pulse motor).
246	Timeout error on master transfer during master-making (related to Load pulse motor).

Error Type	P98 [Hardware error]
Description	P98-xxx !!System Error!! Press Reset Key If Recovery has Failed, Call Service
To reset display	Turn power OFF and ON.
Error Point	Error Conditions
934	Communication error between MCTL PCB and RF-Tag PCB. (on FR-Tag PCB side)
935	Communication error between MCTL PCB and RF-Tag PCB. (on MCTL PCB side)
937	Undefined serial number.
938	FRAM version down.
947	24V-A does not go ON. (Possible broken Fuse for 24V-A area).
948	24V-A does not go ON. (Possible broken Fuse for 24V-B area).
949	24V-A does not go OFF.
950	24V-B does not go OFF.
952	SH3M PCB flash memory check-sum error.
953	Unsuccessful writing on the SH3M PCB flash memory.

Error Type	P99 [Software error]
Description	P99-xxx !!System Error!! Press Reset Key If Recovery has Failed, Call Service
To reset display	Turn power OFF and ON.
Error Point	Error Conditions
900	Heart-beat lock error. (LED flashing on MCTL PCB)
982	Wrong loader.

Jam errors

Error Type	A01 [Master feed error]
Description	A01-xxx Master Mis-Feed Pull Out Master Making Unit and Rewind Master Roll, then Reset Master in Place.
To reset display	Open the master-making unit and rewind the master material on the master roll, and then reset the master, or turn OFF the power and power back ON.
Error Point	Error Conditions
201	Master-positioning sensor does not go ON even after the write pulse motor is activated during the master-positioning, master-cut, or master-loading operation.
202	Master-positioning sensor does not go OFF even when the write pulse motor is reversed during the master-positioning or at start of master-making operation.
211	Master-positioning sensor is ON during standby.
214	Master-positioning sensor is ON at the start of master making.
215	Faulty gate-array control for the write pulse motor (motor does not stop at programmed timing).

Error Type	A02 [Master loading error]
Description	A02-xxx Master Loading Error Pull Out Print Cylinder and Discard Master.
To reset display	Pull out the print cylinder and set it back.
Error Point	Error Conditions
509	Master-loading sensor was OFF when the master was checked at a specified drum angle during the master-loading operation.

Error Type	A04 [Master removal error]
Description	A04-xxx Master Disposal Error Pull Out Print Cylinder and Discard Master.
To reset display	Pull out the print cylinder and set it back.
Error Point	Error Conditions
303	Master-disposal jam sensor was OFF at both 120 and 180 degrees drum angle.

Error Type	A05 [Master present in the master disposal area]
Description	A05-xxx Master Jammed in Disposal Unit Pull Out Master Disposal Box and Remove Jammed Master
To reset display	Pull out master disposal box and place it back after removing the jammed master in the master disposal area, or turn OFF the power and power back ON.
Error Point	Error Conditions
304	Master disposal jam sensor was ON at the completion of the master disposal.
312	Master disposal jam sensor was ON at the start of the master making.
315	Master disposal jam sensor was ON after the completion of the recovery movement.

Error Type	A06 [Check paper feed tray]
Description	A06-xxx Safety SW on Standard Feed Tray is Activated Reset paper on Standard Feed Tray
To reset display	Change the condition of the paper-feed-tray upper/lower safety switches to ON condition, or turn OFF the power and power back ON.
Error Point	Error Conditions
403	Either the upper or lower safety switch of the paper-feed-tray is OFF.

Jam error message which comes up after pressing the asterisk key in J message**

Error Type	A07 [Paper feed error]
Error Point	Error Conditions
409	Paper-ejection sensor was OFF when the paper should have arrived, and the paper sensor was ON when the machine stopped (Paper misfeed).
412	Paper sensor was OFF three times in succession when a paper misfeed was detected (paper misfeed).
418	The paper sensor was ON at the start of machine operation when the START button was pressed.
429	Paper feed error (recovery error).
432	Paper sensor was ON when the machine went into paper feed retry movement after a paper misfeed.

Jam error message which comes up after pressing the asterisk key in J message**

Error Type	A08 [Paper jam on print drum]
Error Point	Error Conditions
410	Paper-ejection sensor was OFF when paper should have arrived, and the paper sensor was OFF when the machine stopped (paper jam on the print drum).
430	Paper jam on print drum (recovery error).

Jam error message which shows up after pressing the asterisk key in J message**

Error Type	A09 [Paper ejection error]
Error Point	Error Conditions
411	Paper-ejection sensor was ON when the paper should have left the paper-ejection sensor.
417	Paper-ejection sensor was ON at the start of machine operation when the START button was pressed.
431	Paper-ejection error (recovery error).

Jam error message which shows up after pressing the asterisk key in J message**

Error Type	A10 [AF original feed error]
Error Point	Error Conditions
102	The original is pulled out from the AF unit before the scanning is completed.
103	Original jammed under AF registration sensor.
105	Original jammed under AF Read sensor.
106	Original jammed under original ejection sensor.
107	Original does not arrive to the AF Registration sensor.
108	Original does not arrive to the AF Read sensor.
109	Original does not arrive to the original ejection sensor.
169	Original jam on AF caused by opening of the FB stage cover while AF scanning.

Error Type	A16 [Waiting for the master to be removed from the drum]
Description	A16-xxx Master Remains on Print Cylinder (Drum) Pull Out Print Cylinder and Remove Master
To reset display	Pull out the print cylinder (drum), remove the master around it and insert it back.
Error Point	Error Conditions
525	Waiting for the master to be removed from the print cylinder (drum).

Error Type	A17 [Cutter error]
Description	A17-xxx System Error in Master Making Unit Take Out Master and then Close Master Making Unit Cover
To reset display	Open the Master making unit, remove the master and close the master making unit.
Error Point	Error Conditions
209	Cutter HP switch is OFF when master-making starts or when the master material is set in the master making unit.

Error Type	A34 [Requesting for the master to be reset]
Description	A34-xxx Master Not Set in Place Insert Lead Edge of Master into Master Entrance and Close Master Making Unit
To reset display	Open the Master making unit, re-insert the master material into the master making unit.
Error Point	Error Conditions
218	Requesting for the master material to be reset into the master making unit.

Option errors

Error Type	B01 [Keycard counter: No card]
Description	B01-xxx Insert Card in Key/Card Counter
To reset display	Insert card.
Error Point	Error Conditions
730	Keycard counter: No card

Error Type	B22 [Job separator: Power off]
Description	B22-xxx !! Job Separator is OFF !! Turn On Power Switch of it
To reset display	Press Reset Key and check and switch ON the power of Job Separator.
Error Point	Error Conditions
721	With the "Tape separation" function set ON, no power is supplied to the job separator when start key is pressed.
727	After cluster-A signal turned ON, BUSY-signal stayed "L" more than 7 seconds (power to job separator was turned OFF while the tape is being ejected).

Error Type	B23 [Job separator: No tape]
Description	B23-xxx No Paper Tape in Job Separator Replace Tape Roll
To reset display	Press Reset Key and set paper tape in Job Separator.
Error Point	Error Conditions
722	With the "Tape separation" function set ON, no tape detected in the job separator when the start key is pressed.
723	No tape remains in job separator upon completion of the tape-ejection operation.

Error Type	B24 [Job separator: Tape jam]
Description	B24-xxx Paper Tape Jam in Job Separator Remove Paper Tape
To reset display	Press Reset Key and remove the jammed tape.
Error Point	Error Conditions
724	Tape jam detected when the start key is pressed with the "Tape separation" function set to ON.
725	The tape-jam detection signal is "H" for more than 1.2 seconds after cluster-A signal turns ON (tape misfeed).
726	Job separator tape-jam detection signal is "L" when the BUSY signal changes from "L" to "H" (or after 7 sec. at "L") after the cluster-A signal goes ON (tape misfeed).

Error Type	B31 [Network cable not connected]
Description	B31-xxx !! No Linked Printer Detected !! Check Cable Connection and Power Supply for Linked Printer
To reset display	Press Reset Key and connect the network cable.
Error Point	Error Conditions
916	Network cable is not connected when the machine is powered ON.

Error Type	B32 [NIC - Communication error]
Description	B32-xxx !! No Linked Printer Detected !! Check Cable Connection and Power Supply for Linked Printer
To reset display	Press Reset Key, and connect the linked printer and network cable.
Error Point	Error Conditions
917	Communication error on the network.
920	Error detected by Network Interface Card (NIC) - NAK (negative acknowledgement was received).

Error Type	B33 [IP address set up error]
Description	B33-xxx No IP Address Assigned to This Printer Contact Your Network Administrator
To reset display	Press Reset Key, and enter the IP address..
Error Point	Error Conditions
931	DHCP is ON, but DHCP server is not found.

Error Type	B34 [Linked Printer: No Toner]
Description	B34-xxx No Toner in Linked Printer
To reset display	Press Reset Key, and check the toner amount in linked printer.
Error Point	Error Conditions
919	No toner in the linked printer.

Errors involving consumables

Error Type	C01 [Replace ink cartridge]
Description	C01-xxx No Ink Replace Ink Cartridge
To reset display	Remove the empty ink cartridge and replace with a new one.
Error Point	Error Conditions
512	The ink sensor did not go ON even when inking was performed for a preset duration.
563	Ink remaining amount is zero from the information on the RF-Tag.
574	Inkless error was detected 5 times consecutively on one same ink cartridge.

Error Type	C02 [Replace master roll]
Description	C02-xxx No Master Replace Master Roll
To reset display	Remove the empty master roll and replace with a new one.
Error Point	Error Conditions
200	The master end was detected twice in succession at 10-milliseconds intervals during master transport.
240	Master remaining amount is zero from the RF-Tag information.
253	Masterless error was detected twice consecutively on one same master-roll.

Error Type	C03 [Master disposal box full]
Description	C03-xxx Master Disposal Box is Full Empty Master Disposal Box
To reset display	Remove master disposal box from the machine, throw away the disposed master from the disposal box and return the disposal box in the machine after a interval of over 5 seconds.
Error Point	Error Conditions
308	Compression detection position was reached before the master-compression-motor encoder-sensor count reached the specified level, after the master compression motor turned ON in the compressing direction.

Error Type	C04 [No paper on the paper feed tray]
Description	C04-xxx Add Paper
To reset display	Add paper on the paper feed tray.
Error Point	Error Conditions
402	Paper detection sensor is OFF (not detecting paper).

Set check errors

Error Type	D01 [Print drum not set]
Description	D01-xxx Set Print Cylinder (Drum) in Place
To reset display	Set the print drum in the machine.
Error Point	Error Conditions
526	Print drum is not set in the machine (drum connection signal, drum safety switch, and drum-lock sensor is OFF.
527	Print drum connection signal is OFF when the print drum was inserted in the machine.
528	Print drum safety switch is OFF when the print drum was inserted in the machine.
529	Print drum lock sensor is OFF when the print drum was inserted in the machine (time-out: 5 seconds).
530	Print drum connection signal does not go OFF within 5 seconds after the print drum safety switch went OFF when the print drum was pulled out.

Error Type	D02 [Incorrect print drum]
Description	D02-xxx Wrong-Type Print Cylinder Installed Replace with Correct Type
To reset display	Set correct print drum in the machine.
Error Point	Error Conditions
532	Incorrect print drum is used.

Error Type	D03 [Ink cartridge not set]
Description	D03-xxx Install Ink Cartridge
To reset display	Install ink cartridge in the print drum.
Error Point	Error Conditions
533	Bottle set switch is OFF.

Error Type	D04 [Incorrect ink cartridge]
Description	D04-xxx Wrong-type Ink Cartridge Installed or Cannot Read Ink Info Replace Ink Cartridge or Contact dealer/Riso office
To reset display	Replace with correct ink cartridge.
Error Point	Error Conditions
534	Incorrect ink cartridge is used.
560	Ink RF-Tag is not detected on ink bottle.
561	Ink RF-Tag communication error (communication with the ink cartridge was interfered by noise).
562	Wrong ink cartridge information on the Ink RF-Tag.
564	Detected a mismatch in the Ink RF-Tag.
575	RF-Tag software error.

Error Type	D05 [Master not set]
Description	D05-xxx Set Master in Place
To reset display	Insert leading edge of the master material into the master entrance and close the master making unit.
Error Point	Error Conditions
210	Master detection sensor is OFF (not detecting master material).

Error Type	D07 [Master disposal box not set]
Description	D07-xxx Set Master Disposal Box in Place
To reset display	Set master disposal box in the machine.
Error Point	Error Conditions
310	Master disposal box safety switch is OFF. (Does not detect the error during low-power mode in which 24V power is down)

Error Type	D08 [Master making unit not set]
Description	D08-xxx Set Master Making Unit in Place
To reset display	Insert the master making unit in the machine.
Error Point	Error Conditions
224	Master making unit is not set (both the safety switch and lock sensor are OFF).
226	Master making unit safety switch is still OFF when the master making unit is set in position.
227	Master making unit lock sensor is still OFF when the master making unit is set in position (timeout: 5 seconds).
228	Master making unit lock sensor is still ON even after the master making unit safety switch went OFF, when the master making unit was pulled out of the machine.

Error Type	D09 [Master making unit cover is not closed]
Description	D09-xxx Close Master Making Unit Cover
To reset display	Close the master making unit cover.
Error Point	Error Conditions
212	Master making unit cover set sensor is OFF.

Error Type	D11 [Front cover not closed]
Description	D11-xxx Close Front Cover
To reset display	Close the front cover of the machine.
Error Point	Error Conditions
535	Front cover set sensor is OFF.

Error Type	D13 [Rear cover not closed]
Description	D13-xxx Rear Cover of Main Body is Off Call Service
To reset display	Close the rear cover of the machine to activate the rear cover (serviceman safety) switch. [Field serviceman has to close and screw-on the rear cover]
Error Point	Error Conditions
009	The rear cover is opened (serviceman safety switch is OFF).

Error Type	D17 [Incorrect master roll]
Description	D17-xxx Wrong-type Master Installed or Cannot Read Master Info Replace Master Roll or Contact dealer/Riso office
To reset display	Set correct master roll in the machine.
Error Point	Error Conditions
236	Incorrect master roll.
237	Master roll RF-Tag not detected.
238	Master roll RF-Tag communication error. (Communication interrupted by noise)
239	Incorrect information on the Master roll RF-Tag.
241	Mismatch in the Master roll RF-Tag information.
256	Master roll RF-Tag software error.

Error Type	D18 [Print cylinder (drum) is ready for removal]
Description	D18-xxx Print Cylinder (Drum) has been Unlocked
To reset display	Pull out the print Cylinder (Drum).
Error Point	Error Conditions
522	Print Cylinder (Drum) is unlocked for its removal. (Drum lock Solenoid is ON).

Error Type	D19 [Master making unit is ready for removal]
Description	D19-xxx Master Making Unit has been Unlocked
To reset display	Pull out the master making unit.
Error Point	Error Conditions
223	Master making unit is unlocked for its removal. (Lock Solenoid is ON).

Error Type	D22 [Print cylinder (drum) removal command]
Description	D22-xxx Print Cylinder (Drum) Not Set in Place. Press Cylinder (Drum) Release Button and Pull Out Print Cylinder (Drum) after the Button Lights.
To reset display	Pull out print cylinder (drum) from the machine.
Error Point	Error Conditions
540	Cannot access to the EEPROM on the print drum PCB.
542	Print drum PCB EEPROM data error. (CRC error within the EEPROM.)

Warnings (requiring service calls)

Error Type	E01 [Replace battery]
Description	E01-xxx !!Low Battery!! Call Service
To reset display	Press Reset Key, and replace the battery.
Error Point	Error Conditions
010	Battery voltage was less than 2.1 V when the power was switched ON (weak battery: time to replace battery).

Error Type	E02 [Maintenance call]
Description	E02-xxx !!Maintenance!! Call Service
To reset display	Press Reset Key, and also reset the maintenance call value setting by test mode.
Error Point	Error Conditions
011	Master counter reached the value set for the maintenance call (value set by test mode). [The message appears when either the power is turned ON, the unit is reset, or when the machine operation ended.]
012	Copy counter reached the value set for the maintenance call (value by set test mode). [The message appears when either the power is turned ON, the unit is reset, or when the machine operation ended.]
022	Maintenance counter inside the print drum reached the value set for the maintenance call (value set by test mode). [The message appears when either the power is turned ON, the unit is reset, or when the machine operation ended.]

Warnings (Miscellaneous)

Error Type	F01 [No master on print cylinder (drum)]
Description	F01-xxx No Master on Print Cylinder (Drum) Make a New Master
To reset display	Make a new master with an original.
Error Point	Error Conditions
015	There is no master on the print drum at the start of printing.

Error Type	F02 [Master image larger than paper size: 1]
Description	F02-xxx Page Format is Larger than Paper Size !! Possible Ink Smudges on Prints !!
To reset display	Press "OK" or "Cancel" button. Also check the paper size.
Error Point	Error Conditions
018	Paper size does not match with the image size on the print drum at the start of printing. The paper size is smaller than the image size on the master.

Error Type	F03 [Multi-up printing - Incorrect paper size]
Description	F03-xxx !! Multi-Up is Not Available with This Paper Size !! Replace with Proper Paper of Standard Size
To reset display	Press reset key and place correct size papers on the paper feed tray.
Error Point	Error Conditions
016	Tried to make multi-up printing with incorrect paper size.

Error Type	F05 [Print quantity under "Minimum Print Quantity"]
Description	F05-xxx Enter Print Quantity Over The Programmed Minimum Value
To reset display	Enter print quantity value over the programmed minimum value.
Error Point	Error Conditions
019	In master making, the print quantity selected is less than the minimum print quantity.

Error Type	F10 [Master image larger than paper size: 2]
Description	F10-xxx Page Format is Larger than Paper Size !! Possible Ink Smudges on Prints !! (Continue->PROOF Key)
To reset display	Press Cancel key to cancel, or press Proof key to continue.
Error Point	Error Conditions
021	Paper size does not match with the size of image on the print drum when test print is selected and activated.

Error Type	F21 [Next original not set on AF for multi-up printing]
Description	F21-xxx Set original on AF
To reset display	Place original on the AF unit.
Error Point	Error Conditions
032	Next original is not set on the AF unit in multi-up printing.

Error Type	F22 [Next original not set on FB for multi-up printing]
Description	F22-xxx Set original on Stage Glass
To reset display	Place original on the stage glass.
Error Point	Error Conditions
033	Next original is not set on the FB unit in multi-up printing.

Error Type	F37 [AF cannot be used in book mode]
Description	F37-xxx !! Book Shadow Editor is Not Available with ADF !! Place Original on Stage Glass
To reset display	Place original on the stage glass.
Error Point	Error Conditions
050	Original was set on the AF with book mode in master making.

Error Type	F50 [Linked printer error]
Description	F50-xxx Automatic Printer-Selection Error
To reset display	Check linked printer.
Error Point	Error Conditions
910	Error on the linked printer.

Error Type	F54 [Linked printer error]
Description	F54-xxx Automatic Printer-Selection Error Add paper on linked printer
To reset display	Add paper in the linked printer.
Error Point	Error Conditions
923	No paper in the linked printer.

Error Type	F55 [Linked printer error]
Description	F554-xxx Automatic Printer-Selection Error Print Job Interrupted
To reset display	Resend the print job.
Error Point	Error Conditions
924	Print job command interrupted.

Error Type	F58 [Printing from Linked Printer Disabled - Initializing NET-C]
Description	F58-xxx Starting Up RISORINC-NET Please Wait a Moment
To reset display	Press the "Close" button.
Error Point	Error Conditions
927	Printing from Linked Printer disabled (NET-C being initialized).

Parameter errors

Error Type	H01 [Ink color setting error]
Description	H01 Cannot Get Consumables Info Input Values Required
To reset display	Enter the required parameter value. (1: black 2: color)

Error Type	H02 [Print density adjustment (ink) error]
Description	H02 Cannot Get Consumables Info Input Values Required
To reset display	Enter the required parameter value. (1: light to 5: dark)

Error Type	H03 [Test printing print-density adjustment (ink) error]
Description	H03 Cannot Get Consumables Info Input Values Required
To reset display	Enter the required parameter value. (1: light to 5: dark)

Error Type	H04 [Master-making density setting error]
Description	H04 Cannot Get Consumables Info Input Values Required
To reset display	Enter the required parameter value. (1: light to 10: dark)

Error Type	H05 [Print density adjustment (master) error]
Description	H05 Cannot Get Consumables Info Input Values Required
To reset display	Enter the required parameter value. (1: light to 5: dark)

Error Type	H06 [Test printing print-density adjustment (master) error]
Description	H06 Cannot Get Consumables Info Input Values Required
To reset display	Enter the required parameter value. (1: light to 5: dark)

Paper/Original errors (J-codes)

Error Type	J** [Paper/Original jam error]
Description	J** Paper Jam Remove Paper in Indicated Areas and Press [OK] Button
To reset display	Remove jammed paper or original and press Reset key.

In the case where more than one **A-code** errors (listed below) occur, the two-digit error-type number which follows after the **J** is the sum of the Corresponding Values for each of those **A-code** errors.

Error Type	Error Description	Bit	Corresponding Value
A10	AF original feed error	0	1
A09	Paper ejection error	1	2
A08	Paper jam on print drum	2	4
A07	Paper feed error	3	8

Example: If A10 and A08 jam errors occur at the same time, the panel message will show error **J05**.

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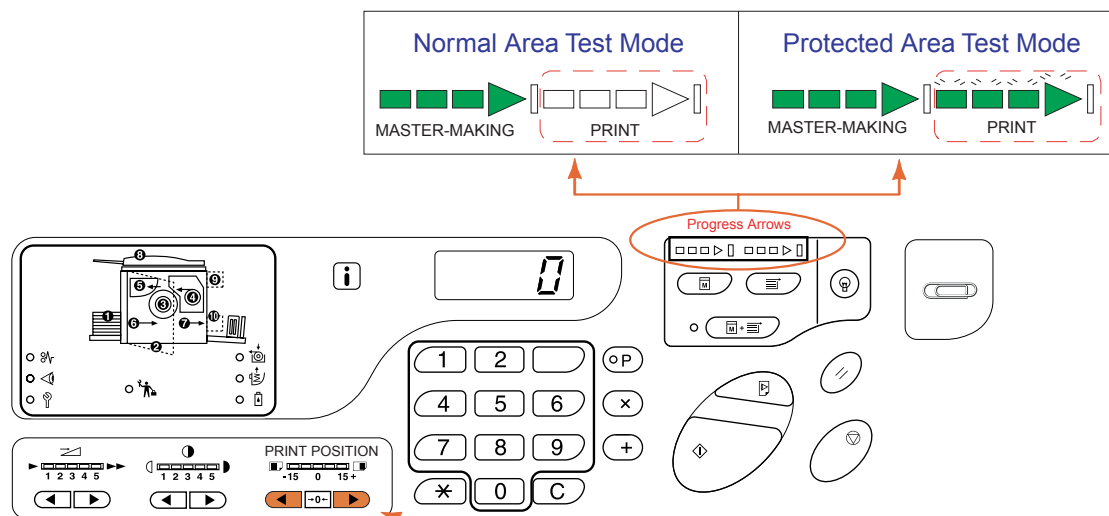
MEMO

CHAPTER 17: TEST MODE

Contents

Starting up the Test Mode	17-2
Activation & Exit	17-2
0001 to 0117	17-3
0127 to 0144	17-4
0145 to 0177	17-5
0196 to 0198	17-6
0200 to 0353	17-7
0380 to 0386	17-8
0400 to 0527	17-9
0540 to 0575	17-10
0576 to 0578	17-11
0600 to 0740	17-12
0741 to 0755	17-13
0756 to 0765	17-14
0766 to 0775	17-15
0801 to 0888	17-16
0889 to 0941	17-17
0942 to 0950	17-18
0970 to 0972	17-19
1102 to 1212	17-20
1214 to 1223	17-21
1224 to 1234	17-22
3000 to 3071	17-23
3072 to 3171	17-24

Starting up the Test Mode



To access into the Test Mode, press the two print position keys at the same time and turn the machine power ON.

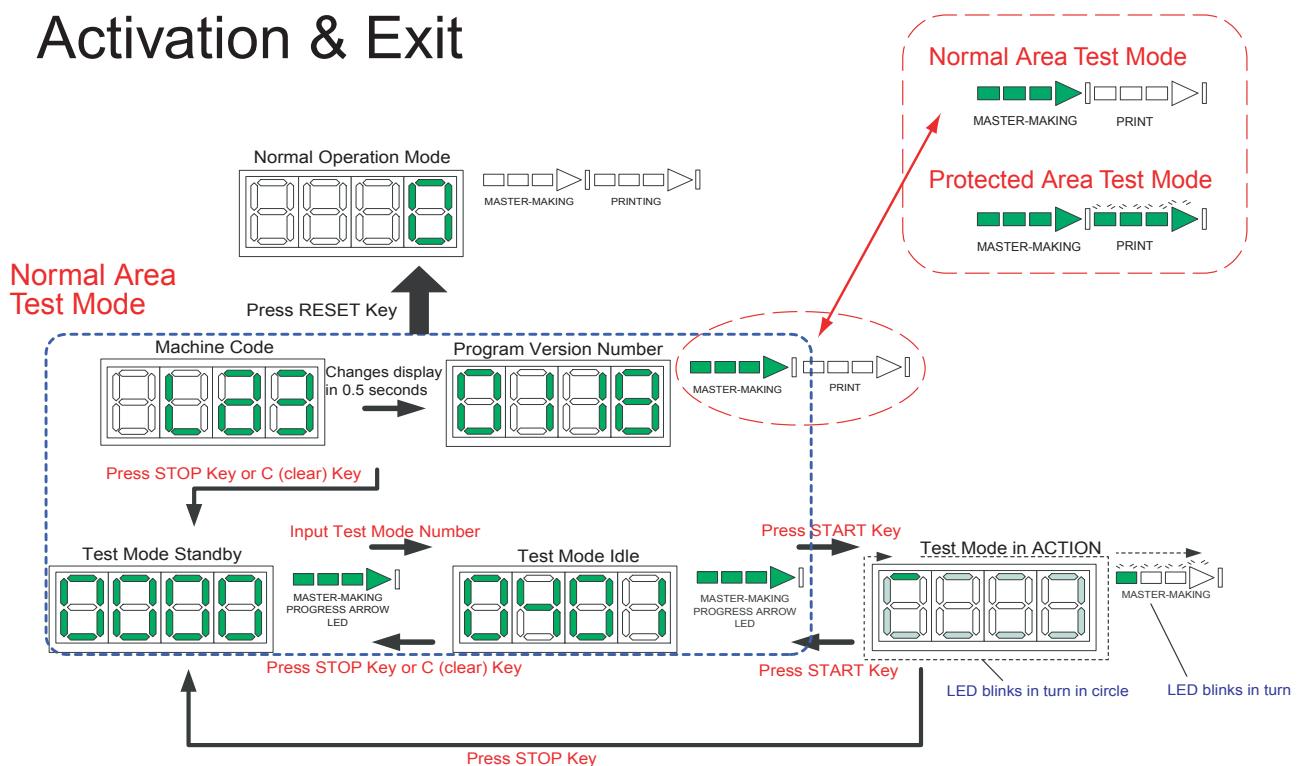
Standard Test Mode: No. 0001 - 0999

Options Test Mode: No. 3000 - 3599

Protected area Test Mode: No. 1000 - 1399

An access code of No. 9874 needs to be input in order to get into the Protected area Test Mode.

Activation & Exit



1. System Panel Test Mode

No.	Sensors, switches	Detection status
0001	Wakeup Key	Key Pressed
0002	Solenoid counter connection signal	Solenoids counter connected
0003	24V A output signal	24V-A ON (24V output)
0004	24V B output signal	24V-B ON (24V output)
0005	Serviceman safety SW (Rear cover safety SW)	Short interval beep sound = SW ON (Rear Cover installed). Long interval beep sound = SW OFF (Rear Cover removed: Interlock Safety Switch off).
No.	Motor solenoid system	Remarks
0062	Wakeup LED	LED Illuminates
No.	Unit check	Details
0080	Test Print A (checkered) Creates Test pattern 1 (Checker Flag)	
0081	Test Print B (cross stripes) Creates Test pattern 2 (Cross Lines)	
0082	Test Print C (Dot1) [Available only on RZ3 series] Creates Test pattern 4 (Dot 1)	
0083	Test Print D (Dot2) [Available only on RZ3 series] Creates Test pattern 5 (Dot 2)	
0084	Test Print E (Dot1 + Cross Lines) [Available only on RZ3 series] Creates Test pattern 6 (Dot 1 + Cross Lines)	
0085	Test Print F (Dot2 + cross stripes) [Available only on RZ3 series] Creates Test pattern 7 (Dot 2 + Cross Lines)	
0087	Paper-Feed Test (continuous feeding) Speed 1 = 60rpm Speed 2 = 80rpm Speed 3 = 100rpm Speed 4 = 110rpm Speed 5 = 130rpm	
0088	Low-Speed Printing Operation Prints continuously at 15 rpm.	
0089	Stepped Printing Operation Press "Start" key to switch on the suction fan. Prints at 15 rpm only while "Test print" key is pressed. Printing stops when "Test Print" key is released, and resumes if the key is pressed again. Press "Stop" to switch suction fan off.	
0094	Unit Initialization Initializes the mechanical moving units to their home positions (TPH pressure, master compression plate, drum lock, clamp unit, vertical print position, printing pressure).	
0095	System Configuration Data Output Creates a master for the CI system data.	
0099	Error Record Stores the error logs accumulated on FLASH memory into CF card.	
0100	Rev Manual Event Code Set Stores the settings set in Test mode "No. 196 to 198" manual event codes into REv Flash address in CF card.	
0101	Machine Clock activation (Available only on RZ3 series)	Activates time set by Test Modes No.0171 to 0173. The new clock time set by test mode No. 0171 through No.0173 will not be activated unless this test mode No. 0101 is activated.
No.	Data clear	Details
0110	Clearing Jam Status Data Forcibly clears the jam.	This test mode can also be used to clear error data for items for which jam can otherwise be cleared only by the jam release procedure. Consumables errors cannot be cleared.
0111	Clearing User Memory User area memory clear (Memo down all the settings before activation.)	Initializes data in user area memory to the programming defaults.
0112	Clearing Normal Area Test-Mode Data Memory [MACHINE] Normal area test mode memory clear for test modes on the machine. (Memo down all the settings before activation.)	Initializes all normal area test mode settings on the machine to their programming default values. The protected area test modes stay unchanged.
0113	Maintenance Count Clear (master making) Maintenance Call master count clear	Clears the maintenance-call message for master making.
0114	Maintenance Count Clear (printing) Maintenance Call copy count clear	Clears the maintenance-call message for printing.
0115	Maintenance Count Clear (print drum) Maintenance Call print drum print count clear	Clears the maintenance-call message for print drum.
0117	Clearing Normal Area Test-Mode Data Memory [PRINT DRUM] Normal area test mode memory clear for test modes on the print drum. (Memo down all the settings before activation.)	Initializes all normal area test mode settings within the EEPROM of the print drum to their programming default values. The protected area test modes stay unchanged.

No.	Data check	Details	
0127	AF connection status	Displays whether there is any AF connection. 0: not connected 1: connected (displays program version if ROM is set. Example: Displays "0101" for Ver.1.01	
0128	Job Separator connection status	Displays whether there is any Job Separator connection. 0: not connected 1: connected	
0129	NIC connection status	Displays whether there is any NIC connection. 0: not connected 1: connected	
0130	Mechanical control PCB program version display	Displays Mechanical control PCB program version. Example: Displays "0101" for Ver.1.01	
0131	ROSA PCB program version display	Displays ROSA program version. Example: Displays "0101" for Ver.1.01	
0135	Paper Size ID display	Displays paper ID decided according to paper size VR and paper size detection sensor. Paper size ID is as follows:	
	Paper size on feed tray is displayed by ID numbers.	Paper ID 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 30 31 32 50 51	Paper description No paper A3 B4 A4 A4 landscape B5 B5 landscape A5 A5 landscape B6 B6 landscape Post card Post card landscape Ledger Legal Letter Letter landscape Statement Statement landscape Foolscap Chinese Paper No. K16 Chinese Paper No. K16 landscape Chinese Paper No. K8 Paper size undefined 1 (paper size detection sensor : ON) Paper size undefined 2 (paper size detection sensor : OFF)
0137	Maintenance counter reading (Master Making)	Display of 1 = 100 master makings. Example: 1234 input = 123,400 master makings.	
0138	Maintenance counter reading (Printing)	Display of 1 = 1000 printings. Example: 1234 input = 1,234,000 prints.	
0139	Maintenance counter reading (Print Drum)	Display of 1 = 1000 printings. Example: 1234 input = 1,234,000 prints.	
No.	Data setting	Details	
0140	Scan/Master-Making Independent Mode		
	Description	Selection to make the scan/master-making action together with the master-removal-action or to make the two actions separately.	
	Setting	0 : Together (default) 1: Independent	
0143	Maintenance-Master Count Entry		
	Description	Sets the number of masters at which the maintenance-call message is displayed.	
	Setting	Range : Unit : Default : 0 :	0 to 999,900 1 (x 100) No maintenance call display
0144	Maintenance-Copy Count Entry		
	Description	Sets the number of prints at which the maintenance-call message is displayed.	
	Setting	Range : Unit : Default :	0 to 9,999,000 1 (x 1000) 0 : No display maintenance call display

No.	Data setting	Details	
0145	Maintenance-Drum Meter Entry		
	Description	Sets the number of print-drum prints at which the maintenance-call message is displayed (set for each print drum).	
	Setting	Range : Unit : Default :	0 to 9,999,000 1 (x 1000) 0 : No maintenance call display
0151	Print Speed After Short Interval		
	Description	Gradual print speed acceleration after short intervals between printing job.	
	Setting	0 : Disabled (default) 1: Enabled	
0154	Minimum Print Quantity Control		
	Description	Enables/Disables making input changes by the Users Mode.	
	Setting	0 : Disabled 1: Enabled (default)	
0155	Counter Action Control		
	Description	Enables/Disables copy counter & master counter (solenoid counter, software counter). This setting returns to default once the power is switched OFF.	
	Setting	0 : Disabled 1: Enabled (default)	
0171	Machine Clock Setting (YEAR) [Available only on RZ3 series]		
	Description	Sets "year" in clock.	
	Setting	Range : Unit : Default:	2000 to 2199 (Year 2000 to 2199) 1 = 1 year 2000 (Year 200) Test Mode No. 0101 must be activated after inputting test modes No. 0171 through No. 0173 to activate the new setting.
0172	Machine Clock Setting (MONTH & DATE) [Available only on RZ3 series]		
	Description	Sets "month / date" in clock.	
	Setting	Range : Unit : Default :	Left 2 digits= MONTH: 1 to 12 (January to December) Right 2 digits = DAY: 1 to 31 (Days 1 to 31) 1 = 1 month, 1 = 1 day 0101 (January 1) Test Mode No. 0101 must be activated after inputting test modes No. 0171 through No. 0173 to activate the new setting.
0173	Machine Clock Setting (HOUR & MINUTE) [Available only on RZ3 series]		
	Description	Sets "hour / second" in clock.	
	Setting	Range : Unit : Default :	Left 2 digits = HOUR: 0 to 23 (0 to 23 hours) Right 2 digits = MINUTE: 0 to 59 (0 to 59 minutes) 1 = 1 hour, 1 = 1 minute 0000 Test Mode No. 0101 must be activated after inputting test modes No. 0171 through No. 0173 to activate the new setting.
0174	Chinese Paper No.16 (Width data setting)		
	Description	Sets paper width data.	
	Setting	Range : Unit : Default :	191 to 199 (191mm to 199mm) 1 = 1mm 195 (195mm)
0175	Chinese Paper No.8 (Width data setting)		
	Description	Sets paper width data.	
	Setting	Range : Unit : Default :	266 to 276 (266mm to 276mm) 1 = 1mm 271 (271mm)
0176	Chinese Paper No.8 (Length data setting)		
	Description	Sets paper length data.	
	Setting	Range : Unit : Default :	385 to 395 (385mm to 395mm) 1 = 1mm 390 (390mm)
0177	Paper Size Detection Selection (Normal or Chinese)		
	Description	Normal paper size detection or Chinese paper size detection.	
	Setting	Range : Unit : Default :	0 : Normal paper size detection (default) 1 : Chinese paper size detection. 0 : Normal paper size detection.

No.	Data setting	Details	
0196	REv Manual Event Code Input (1): Trouble Code		
	Description	Rev manual event input of the 1st set of 4-digit numbers.	
	Setting	Range : Unit : Default :	0 to 9999 1 = 1 0
0197	REv Manual Event Code Input (2): Trouble Area Code		
	Description	REv manual event input of the 2nd set of 4-digit numbers.	
	Setting	Range : Unit : Default :	0 to 9999 1 = 1 0
0198	REv Manual Event Code Input (3): Job Code		
	Description	REv manual event input of the 3rd set of 4-digit numbers.	
	Setting	Range : Unit : Default :	0 to 9999 1 = 1 0

2. Process /Scanning Test Mode

No.	Sensor switch check	Detection status	
0200	Carriage HP sensor	Carriage at Home position.	
0201	Flatbed Original Det. Sensor	Detecting (original present)	
0209	Compression plate open/shut sensor	Original Det. Cover closed.	
No.	Motor, solenoid	Remarks	
0260	Scanner lamp	Switches ON/OFF scanner lamp [Available only on RZ3 series]	
No.	Unit check	Details	
0281	Carriage Home Action	Brings the carriage to the Home Position. (RZ2 series = Scanner carriage, RZ3 series = Mirror carriage)	
0284	Scanner Cycle Continuous Action	RZ3 series : Scanner one cycle action with auto-base-control (ABC) action. RZ2 series : Scanner one cycle action without the ABC action. Repeats the one cycle action until the STOP key is pressed. Presses "Stop" key to stop the motion and returns to Home position.	
0287	Scanner Lamp Replace Positioning [Available only on RZ3 series]	Moves the scanner to lamp replacing position.	
0288	Scanner HP Positioning & Image sensor adjustment Positioning [Available only on RZ2 series]	1. Scanner HP positioning. 2. Image sensor adjustment positioning Repeats above two positioning by each pressing of START key.	
0289	Scanner "Shipping" Positioning	Moves Scanner to the machine shipping position (Same for scanner unit shipping position).	
No.	Data setting	Details	
0340	Line-Copy Slice Level Adjustment [For RZ2 series]		
	Description	Sets the slice level for line mode. Larger values for lighter print.	
	Setting	Range: Unit : Default :	-8 to 8 1 0
0340	Line-Copy Slice Level Adjustment [For RZ3 series]		
	Description	Sets the slice level for line mode. Larger values for lighter print.	
	Setting	Range : Unit : Default :	-16 to 16 1 0
0341	Auto Base Control (ABC) Slice Level Adjustment [Available only on RZ3 series]		
	Description	Sets the slice level for ABC. Larger values for lighter print.	
	Setting	Range : Unit : Default :	-16 to 16 1 0
0350	Halftone Curve Selection (Photo)		
	Description	Selects the matrix forming the halftone-curve base for photo mode.	
	Setting	Range: Unit : Default :	0 to 8 1 4
0351	Halftone Curve Selection (Dot Photo) [Available only on RZ3 series]		
	Description	Selects the matrix forming the halftone-curve base for dot mode.	
	Setting	Range : Unit : Default :	0 to 8 1 4
0352	Halftone Curve Selection (Duo)		
	Description	Selects the matrix forming the halftone-curve base for DotDuo mode.	
	Setting	Range : Unit : Default :	0 to 8 1 4
0353	Halftone Curve Selection (Dot Duo) [Available only on RZ3 series]		
	Description	Selects the matrix forming the halftone-curve base for DotDuo mode.	
	Setting	Range : Unit : Default :	0 to 8 1 4

No.	Data setting	Details	
0380	FB Horizontal Scan Position Adjust [For RZ2 series]		
	Description	Adjusts the original horizontal scan position on the flatbed (For FB scanning).	
	Setting	Range : Unit : Default :	±1.5mm from the programmed default position (+ is to left) 0 to ±15 (example: 15 = 1.5mm) 5 (0.5mm) 0 (0mm)
0380	FB Horizontal Scan Position Adjust [For RZ3 series]		
	Description	Adjusts the original horizontal scan position on the flatbed (For FB scanning).	
	Setting	Range : Unit : Default :	0mm to ± 3.0mm from the programmed default position (+ is to left) 0 to ±30 (example: 25 = 2.5mm) 5 (0.5mm) 0 (0mm)
0381	FB Scan Start Position Adjust		
	Description	Adjusts the original scanning start position on the flatbed	
	Setting	Range : Unit : Default:	±6.0mm from the programmed default position (+ moves scan start position down) 0 to ±60 (example: 28 = 2.8mm) 1 (0.1mm) 0 (0mm)
0382	FB Scanning Speed Adjustment		
	Description	Adjusts the original scanning speed on the flatbed (Adjust the speed for Lead PM)	
	Setting	Range : Unit : Default :	±5.0% from the programmed default position (- causes shrinkage) 0 to ±50 (example: 50 = 5.0%) 1 (0.1%) 0 (0%)
0386	Activates or deactivates center black dot setting		
	Description	Creates the image which adds the center black dot to image data.	
	Setting	Range 0: No center black dot <Default> 1: Center black dot present	

3. Mater making / Disposal Test Mode (Unit Number 04/05)

No.	Sensor switch check	Detection status
0400	Master-positioning sensor	Sensor light reflected (Master present) / No reflection (No master)
0401	Master detection sensor	Sensor light reflected (Master present) / No reflection (No master)
0402	Master end sensor	Sensor light blocked (Master end seal detected)
0403	Cutter HP SW [Shuttle blade cutter]	SW pressed (Cutter at HP)
0403	Cutter HP SW [Rotary cutter]	SW not pressed (Cutter at HP)
0404	Cutter Stop Position SW [Shuttle blade cutter]	SW pressed (Cutter at end position)
0406	TPH pressure sensor	Sensor light blocked (TPH down position)
0407	Master-making-unit set sensor	Sensor light blocked (Master-making unit cover closed)
0408	Master-making-unit lock sensor	Sensor light blocked (Master-making unit locked in position)
0409	Master-making-unit safety SW	SW pressed (Master-making unit upper cover is closed)
0410	Master-making-unit releasing button	SW ON (Button is pressed)
0420	Master-disposal Jam Sensor	Sensor light is not blocked (Master is detected - jammed)
0421	Master-compression HP Sensor	Sensor light blocked (Master compression plate at HP)
0423	Master-disposal BOX safety SW	SW ON (Master-Disposal Box is set in place)
0425	Master-compression motor FG sensor	Sensor light blocked (Encoder disc is detected)
0426	Master-removal motor FG sensor	Sensor light blocked (Encoder disc is detected)
No.	Motor, solenoid	Remarks
0460	Thermal-pressure motor (CW)	Rotates in clock-wise (CW) direction
0461	Thermal-pressure motor (CCW)	Rotates in counter-clock-wise (CCW) direction
0462	Write pulse motor (CW)	Rotates in clock-wise (CW) direction (master feeding direction)
0463	Write pulse motor (CCW)	Rotates in counter-clock-wise (CCW) direction (master returning direction)
0464	Load pulse motor (CW)	Rotates in clock-wise (CW) direction (master feeding direction)
0466	Write pulse motor + Load pulse motor (CW)	Rotates both the Write & Load pulse motors in clock-wise (CW) direction (master feed direction)
0467	Master-making-unit release button LED	LED illuminates.
0470	Master removal motor (CW)	Rotates in clock-wise (CW) direction (master feed into master-disposal-box direction)
No.	Unit check	Details
0480	Cutter motor 1 cycle motion	Performs one cutting motion.
0481	Thermal pressure motor action (TPH down)	Moves the TPH down.
0482	Thermal pressure motor action (TPH up)	Moves the TPH up
0488	Master-making-unit Lock Solenoid ON/OFF action	Press "Start" key to switch ON the Solenoid. Solenoid automatically switches OFF 10 sec. later.
0489	Storage fan solenoid ON/OFF action	Press "Start" key to switch ON the Solenoid. Solenoid automatically switches OFF 10 sec. later.
0490	Master compression-plate home positioning	Moves master compression plate to the home position.
0493	Master compression-plate continuous movement	Repeats disposal compression action with interval of 3 seconds between the each.
0494	Cutter motor ON action (cut direction) [For checking the motor as one part only. Disconnect the motor from the cutter unit before activation.]	Rotates the cutter motor in the cut direction (maximum 10 seconds)
No.	Data check	Details
0521	TPH thermistor temperature data	Displays the temperature of the TPH thermistor in "degrees Celsius"
0524	TPH power voltage	Displays the voltage applied to the TPH when the power to the TPH is switched ON.
0527	Master usage start date [only on RZ3 modes]	Displays master use start date stored in Master TAG. For example, 2004/2/28 will be displayed as 2004 and 0228 in intervals.

No.	Data setting	Details	
0540	Master Front-End Position Adjust		
	Description	Adjusts return movement a little bit after the master-positioning sensor goes ON to perform inching operation during master setting or following master cutting action.	
	Setting	Range : Unit : Default :	0mm to +10.0mm (+ is master moving back direction) 0 to +100 (example: +15 = 1.5mm moving back) 1 (0.1mm) 50 (5.0mm)
0541	Write start-position adjustment		
	Description	Adjusts the master-making start position <independent from Clamp-range adjustment>(adjusts master stop position distance from master-positioning sensor before read/write-signal goes ON).	
	Setting	Range : Unit : Default :	±5.0mm from the programmed default position (+ moves printed image up) 0 to ±50 (example: 15 = 1.5 mm) 1 (0.1mm) 0 (0mm)
0542	Master-making length adjustment		
	Description	Adjusts the master-making length.	
	Setting	Range : Unit : Default :	±10.0mm from the programmed default position (+ increases length). 0 to ±100 (example: 15 = 1.5mm) 1 (0.1mm) 0 (0mm)
0543	Master-clamp-range adjustment		
	Description	Adjusts the master-clamp range during loading of the master. (independent from master-making length adjustment.)	
	Setting	Range : Unit : Default :	±10.0mm from the programmed default position (+ increases clamping amount). 0 to ±100 (example: 15 = 1.5mm) 1 (0.1mm) 0 (0mm)
0544	Master cut length adjustment		
	Description	Adjusts the length of one master (changes cut timing).	
	Setting	Range : Unit : Default :	±10.0° from 0° (+ increases the master length). 0 to ±100 (example: 100 = 10°) 5 (0.5°) 0 (0°)
0547	Master-making speed adjustment		
	Description	Adjusts the writing speed. (Adjusts the speed of the write pulse motor.)	
	Setting	Range : Setting unit : Default :	±10.0% from the programmed speed (- shrinks the image in master making.). 0 to ±100 (example: 15 for -1.5%) 1 (0.1%) 0 (0%)
0573	Master compression-limit position (maximum end position).		
	Description	Sets the pulse count for the compression-limit position (maximum end position).	
	Setting	Range : Unit : Default :	106 to 163 pulses (Master compression plate position 65° to 100° from HP). 1 (1 pulse) 130 pulses (compression plate angle 90° from HP)
0575	Mater compression duration adjustment		
	Description	Sets the stop time duration for one master compression. (The compression finishes when one it takes one certain time for the encoder disc on master compression motor to make one rotation).	
	Setting	Range : Unit : Default :	5ms to 70ms 5 to 70 (example: 15 = 15ms) 1 (1ms) 53 (53ms)

No.	Data setting	Details	
0576	Master disposal box full detection position adjustment		
	Description	Sets the count for master disposal box full detection position.	
	Setting	Range : Unit : Default :	57 to 131pulse (Master compression plate angle 35° to 80° from HP). 57 to 131 (example: 100 = 100 pulses) 1 (1pulse) 106pulses (Compress plate angle 65° from HP)
0578	Master disposal motor speed selection		
	Description	Selects the master-disposal-motor speed in relation to the print drum rotation speed.	
	Setting	0: Same speed as the print drum speed. 1: 10% faster than the print drum speed. <Default > 2: 20% faster than the print drum speed.	

4. Paper Feed/Eject Test Mode

No.	Sensor switch check	Detection status
0600	Paper detection sensor	Sensor light reflected (paper detected)
0601	Paper-size detection sensor	Sensor light reflected (paper detected)
0602	Elevator upper-limit sensor A [Only for RZ3 series]	Sensor light blocked (Sensor A detecting paper feed tray at maximum up position)
0603	Elevator upper-limit sensor B	Sensor light blocked (Sensor B detecting paper feed tray at maximum up position)
0604	Elevator lower-limit sensor	Sensor light blocked (Sensor detecting paper feed tray at maximum down position)
0605	Paper sensor	Sensor light reflected (paper detected)
0606	Paper-ejection sensor	Sensor light reflected (paper detected)
0607	Paper-feed-tray upper safety SW	Switch ON (paper-feed tray elevation is operational) Switch OFF (paper-feed tray elevation is non-operational = safety SW is triggered)
0608	Paper-feed-tray lower safety SW	Switch ON (paper-feed tray elevation is operational) Switch OFF (paper-feed tray elevation is non-operational = safety SW is triggered)
0609	Paper-feed tray elevation button	Switch ON (button is pressed)
0612	Paper-ejection FG sensor	Sensor light blocked (detecting encoder disc)
0614	Paper-feed pressure sensor	Sensor light blocked (detecting paper feed pressure lever)
No.	Motor, solenoid	Remarks
0660	Paper ejection motor	Rotates the motor.
0661	Suction fan	Activates the fan.
0662	Separation fan	Activates the fan.
No.	Unit check	Details
0681	Paper feed tray maximum up positioning	
	Raises the paper feed tray to the maximum up position by pressing "START" key.	
0682	Paper feed tray elevation up & down	
	Raises and lowers the paper-feed tray repeatedly	
0683	Paper feed tray maximum down positioning	
	Lowers the paper feed tray to the maximum down position by pressing by pressing "START" key.	
0688	Paper-feed clutch ON/OFF action	
	Presses "Start" key to turn ON the clutch. The clutch automatically switches off after 10 seconds.	
0708	Elevator motor ON action	
	Rotates the elevator motor for 10 seconds. [Remove the elevator motor from the machine before activation.]	
No.	Data check	Details
0721	Paper width potentiometer data	Displays the potentiometer adjustment in millimeter value with the fence set at 297mm width.
No.	Data setting	Details
0740	Elevator upper-limit position selection (for Standard paper finish selection by user-mode). [for RZ3 series]	
	Description	Selects the paper-feed-tray upper stop position. If 0 (Auto) is selected, the upper limit position is linked to the paper feed pressure lever position. If 1 to 3 is selected, stop position is fixed.
	Setting	Range 0: Auto (follows Pressure adjust lever) <Default > 1: Standard 2: Card 3: Custom

No.	Data setting		Details	
0741	Paper-feed-clutch ON angle			
	Description	Adjusts the drum angle timing for activating the paper-feed clutch.		
	Setting	Range : Unit : Default :	±10.0° from the programmed default position (+ delays ON timing) 0 to ±100 (example: 25 = 2.5°) 5 (0.5°) 0 (0°)	
0742	Paper-feed-clutch OFF angle			
	Description	Adjusts the drum angle timing for deactivating the paper-feed clutch.		
	Setting	Range : Unit : Default :	±10.0° from the programmed default position (+ delays OFF timing) 0 to ±100 (example: 25 = 2.5°) 5 (0.5°) 0 (0°)	
0743	Paper feed retries after one paper feed action on 1st paper feed area.			
	Description	Sets the number of times the 1st paper feeding is tried when no paper feed occurs.		
	Setting	Range : Default :	1: No paper feed retry action. <default> The machine displays paper feed jam on the first paper feed try. 2: One more paper feed action. Paper jam display if no paper feed after two paper feed actions. 3: Two more tries. Paper jam display if no paper feed after three paper feed actions. 1: No paper feed retry action.	
0751	Paper feed jam detection angle. (Paper IN)			
	Description	Adjusts the drum angle timing for detecting the paper feed jam by paper sensor. (Paper IN)		
	Setting	Range : Unit : Default :	±20.0° from the programmed default position (+ delays detection) 0 to ±200 (example: 125 = 12.5°) 5 (0.5°) 0 (0°)	
0752	Paper feed jam detection angle. (Paper OUT)			
	Description	Adjusts the drum angle timing for detecting the paper feed jam by paper sensor. (Paper OUT)		
	Setting	Range : Unit : Default :	±20.0° from the programmed default position (+ delays detection) 0 to ±200 (example: 125 = 12.5°) 5 (0.5°) 0 (0°)	
0753	Paper receiving jam detection angle. (Paper IN)			
	Description	Adjusts the drum angle timing for detecting paper receiving jam by paper-ejection sensor. (Paper IN)		
	Setting	Range : Unit : Default :	±50.0° from the programmed position (+ delays detection) 0 to ±500 (example: 125 = 12.5°) 5 (0.5°) 0 (0°)	
0754	Paper receiving jam detection angle. (Paper OUT)			
	Description	Adjusts the drum angle timing for detecting paper receiving jam by paper-ejection sensor. (Paper OUT)		
	Setting	Range : Unit : Default :	±50.0° from the programmed default position (+ delays detection) 0 to ±500 (example: 125 = 12.5°) 5 (0.5°) 0 (0°)	
0755	Paper-ejection motor speed adjustment (Proof-Print)			
	Description	Adjusts the speed of the suction belt in relation to the print drum speed.		
	Setting	0 : 3.0 times the drum speed. 1 : 3.4 times the drum speed. <default> 2 : 3.7 times the drum speed. 3 : 4.0 times the drum speed. 4 : 4.5 times the drum speed.		

No.	Data setting	Details	
0756	Paper-ejection motor speed adjustment (Print speed No.1)		
	Description	Adjusts the speed of the suction belt in relation to the print drum speed.	
	Setting	0 : 1.5 times the drum speed. 1 : 1.7 times the drum speed. <default> 2 : 1.8 times the drum speed. 3 : 1.9 times the drum speed. 4 : 2.0 times the drum speed.	
0757	Paper-ejection motor speed adjustment (Print speed No.2)		
	Description	Adjusts the speed of the suction belt in relation to the print drum speed.	
	Setting	0 : 1.3 times the drum speed. 1 : 1.5 times the drum speed. <default> 2 : 1.6 times the drum speed. 3 : 1.7 times the drum speed. 4 : 1.8 times the drum speed.	
0758	Paper-ejection motor speed adjustment (Print speed No.3)		
	Description	Adjusts the speed of the suction belt in relation to the print drum speed.	
	Setting	0 : 1.1 times the drum speed. 1 : 1.3 times the drum speed. <default> 2 : 1.4 times the drum speed. 3 : 1.5 times the drum speed. 4 : 1.6 times the drum speed.	
0759	Paper-ejection motor speed adjustment (Print speed No.4)		
	Description	Adjusts the speed of the suction belt in relation to the print drum speed.	
	Setting	0 : 1.0 times the drum speed. 1 : 1.1 times the drum speed. <default> 2 : 1.2 times the drum speed. 3 : 1.3 times the drum speed. 4 : 1.4 times the drum speed.	
0760	Paper-ejection motor speed adjustment (Print speed No.5)		
	Description	Adjusts the speed of the suction belt in relation to the print drum speed.	
	Setting	0 : 1.0 times the drum speed. 1 : 1.1 times the drum speed. 2 : 1.2 times the drum speed. <default> 3 : 1.3 times the drum speed. 4 : 1.4 times the drum speed.	
0761	Paper-feed-clutch ON angle (Adjustment 1)		
	Description	Adjusts the drum angle timing for the paper-feed-clutch ON (For user-mode paper finish type 1)	
	Setting	Range : Unit : Default :	±20.0° from the programmed default position (+ delays ON timing) 5 (0.5°) 0 (0°)
0762	Paper-feed-clutch OFF angle (Adjustment 1)		
	Description	Adjusts the drum angle timing for the paper-feed-clutch OFF (For user-mode paper finish type 1)	
	Setting	Range : Unit : Default :	±20.0° from the programmed default position (+ delays ON timing) 5 (0.5°) 0 (0°)
0763	Elevator upper-limit position selection (for user-mode paper finish type 1) [for RZ3 series]		
	Description	Selects the paper-feed-tray upper-limit position (For user-mode paper finish type 1)	
	Setting	0 : High (paper feed pressure is higher) 1 : Middle (paper feed pressure is middle) <default> 2 : Low (paper feed pressure is lower)	
0764	Paper-feed-clutch ON angle (Adjustment 2)		
	Description	Adjusts the drum angle timing for the paper-feed-clutch ON (For user-mode paper finish type 2)	
	Setting	Range : Unit : Default :	±20.0° from the programmed default position (+ delays ON timing) 5 (0.5°) 0 (0°)
0765	Paper-feed-clutch OFF angle (Adjustment 2)		
	Description	Adjusts the drum angle timing for the paper-feed-clutch OFF (For user-mode paper finish type 2)	
	Setting	Range : Unit : Default :	±20.0° from the programmed default position (+ delays ON timing) 5 (0.5°) 0 (0°)

No.	Data setting	Details	
0766	Elevator upper-limit position selection (for user-mode paper finish type 2) [for RZ3 series]		
	Description	Selects the paper-feed-tray upper-limit position (For user-mode paper finish type 2)	
	Setting	0 : High (paper feed pressure is higher) 1 : Middle (paper feed pressure is middle) <default> 2 : Low (paper feed pressure is lower)	
0767	Paper-feed-clutch ON angle (Adjustment 3)		
	Description	Adjusts the drum angle timing for the paper-feed-clutch ON (For user-mode paper finish type 3)	
	Setting	Range : Unit : Default :	±20.0° from the programmed default position (+ delays ON timing) 5 (0.5°) 0 (0°)
0768	Paper-feed-clutch OFF angle (Adjustment 3)		
	Description	Adjusts the drum angle timing for the paper-feed-clutch OFF (For user-mode paper finish type 3)	
	Setting	Range : Unit : Default :	±20.0° from the programmed default position (+ delays ON timing) 5 (0.5°) 0 (0°)
0769	Elevator upper-limit position selection (for user-mode paper finish type 3) [for RZ3 series]		
	Description	Selects the paper-feed-tray upper-limit position (For user-mode paper finish type 3)	
	Setting	0 : High (paper feed pressure is higher) 1 : Middle (paper feed pressure is middle) <default> 2 : Low (paper feed pressure is lower)	
0770	Paper-feed-clutch ON angle (Adjustment 4)		
	Description	Adjusts the drum angle timing for the paper-feed-clutch ON (For user-mode paper finish type 4)	
	Setting	Range : Unit : Default :	±20.0° from the programmed default position (+ delays ON timing) 5 (0.5°) 0 (0°)
0771	Paper-feed-clutch OFF angle (Adjustment 4)		
	Description	Adjusts the drum angle timing for the paper-feed-clutch OFF (For user-mode paper finish type 4)	
	Setting	Range : Unit : Default :	±20.0° from the programmed default position (+ delays ON timing) 5 (0.5°) 0 (0°)
0772	Elevator upper-limit position selection (for user-mode paper finish type 4) [for RZ3 series]		
	Description	Selects the paper-feed-tray upper-limit position (For user-mode paper finish type 4)	
	Setting	0 : High (paper feed pressure is higher) 1 : Middle (paper feed pressure is middle) <default> 2 : Low (paper feed pressure is lower)	
0773	Paper-feed-clutch ON angle (Adjustment 5)		
	Description	Adjusts the drum angle timing for the paper-feed-clutch ON (For user-mode paper finish type 5)	
	Setting	Range : Unit : Default :	±20.0° from the programmed default position (+ delays ON timing) 5 (0.5°) 0 (0°)
0774	Paper-feed-clutch OFF angle (Adjustment 5)		
	Description	Adjusts the drum angle timing for the paper-feed-clutch OFF (For user-mode paper finish type 5)	
	Setting	Range : Unit : Default :	±20.0° from the programmed default position (+ delays ON timing) 5 (0.5°) 0 (0°)
0775	Elevator upper-limit position selection (for user-mode paper finish type 5) [for RZ3 series]		
	Description	Selects the paper-feed-tray upper-limit position (For user-mode paper finish type 5)	
	Setting	0 : High (paper feed pressure is higher) 1 : Middle (paper feed pressure is middle) <default> 2 : Low (paper feed pressure is lower)	

5. Print Drum & Printing Test Mode

No.	Sensor switch check	Detection status
0801	Position-B sensor	Blocked (detection plate detected) Machine main drive is at position-B.
0802	Main-motor limit sensor	Blocked (encoder disc detected)
0803	Clamp sensor A	Blocked (disc detected)
0804	Clamp sensor B	Blocked (disc detected)
0806	Master loading sensor	Light reflected (master on the drum)
0807	Print-drum lock-position sensor	Blocked (drum lock lever in lock position)
0809	Ink sensor	In contact with ink (ink present)
0810	Overflow sensor	In contact with ink (ink present)
0811	Ink-cartridge set SW	Pressed
0812	Ink pump FG sensor	Blocked (encoder disc detected)
0816	Drum free rotation SW	Pressed
0817	Front-cover set sensor	Blocked (front cover closed)
0818	Print-drum release button	Pressed
0819	Print-drum connection signal	Connected
0820	Print-drum safety switch	Switch ON (drum set)
0830	Print-Pressure HP Sensor [RZ3 series only]	Blocked (detection plate present)
0831	Vertical-Centering Sensor	Blocked (detection plate present)
No.	Motor, solenoid	Remarks
0861	Main-motor action (30 rpm)	Print drum rotation at speed of 30rpm.
0863	Clamp-motor action (Normal direction)	Clamp motor rotates in the normal correct direction.
0864	Clamp-motor action (Opposite direction)	Clamp motor rotates in the opposite direction.
0866	Print-drum release SW (button)	Illuminates
No.	Unit check	Details
0880	Variable print-drum rotation	
	Print speed key changes the drum rotation speed.	
0881	Position-A action of the print drum	
	Stops the print drum at position-A.	
0882	Inking motor ON action	
	Activates the inking motor for 1 second.	
0883	Clamp home positioning action	
	Resets the clamp unit to the home position.	
0884	Clamp unit cycle action (3 step cycle)	
	Make sure to bring the print drum to Position-A by test mode No. 0881 before activating this test mode to prevent machine damage. Press "Start" key each time to perform the operations specified below. Step 1: From clamp plate closed position to clamp open. Step 2: From Clamp open position to Position-A compensation action. Step 3: From Position-A compensation action to clamp closed position.	
0885	Drum lock solenoid ON/OFF action.	
	Press "Start" key to switch ON the drum lock solenoid. The solenoid switches OFF automatically 10 seconds later.	
0886	Pressure solenoid ON/OFF action.	
	Press "Start" key to switch ON the pressure solenoid. The solenoid switches OFF automatically 10 seconds later.	
0887	Print drum inking action	
	Performs the inking operations in following sequence by one press of the "Start" key: 1. Pumps in the ink into print drum while rotating the drum until the Ink Sensor detects Ink, without pressure roller touching the print drum. 2. Makes a confidential master on the print drum. 3. From the time the ink sensor detects the ink again, the print drum makes 10 rotations with the Pressure Roller pressing against the print drum. 4. The print drum stops at Position-B.	
0888	Print drum ink-drainage action.	
	Performs the ink drainage from the print drum in following sequence by one press of the "Start" key: 1. Makes TPH test mode image on the master and wraps around the print drum. 2. Printing is started with no inking motion and with the ink sensor deactivated. 3. The printing is continued until the "Stop" key is pressed. 4. The print drum stops at Position-B.	

No.	Unit check	Details	
0889	G-Lever mounting position.		
	Stops the machine at G-Lever mounting position (print drum at 104.1 degrees from Position-A). * This is the test mode to activate when mounting the removed G-Lever back on the machine.		
0890	Print drum ink-code copy		
	Copies the ink information (ink color, ink category, etc.) onto the Print Drum PCB from the Ink TAG.		
0892	Machine Position-B stop. (The position in which the print drum can be removed from the machine.)		
	Stops the print drum at machine Position-B. (The test mode can be activated with or without print drum in the machine.)		
0900	Vertical-centering action		
	Moves the vertical print position to the home (center) position.		
0901	Vertical print position one cycle action.		
	Performs the following operation: 1. Moves the vertical print position unit to the home (center) position. 2. Moves the vertical print position unit to the maximum TOP (image to the top 16mm) position, and stops for 1 second. 3. Returns the vertical print position unit to the home (center) position. 4. Moves the vertical print position unit to the maximum DOWN (image to the tail 16mm) position, and stops for 1 second. 5. Returns the vertical print position unit to the home (center) position.		
0904	Print-pressure home positioning. [RZ3 series only]		
	Resets the print pressure to the center (home) position.		
0905	Print-pressure one cycle action. [RZ3 series only]		
	Performs the following operation: 1. Brings the print pressure control unit to the home (center) position. 2. Moves to the print pressure control unit to the Maximum pressure print position, and stops for 1 second. 3. Returns the print pressure control unit to the home (center) position. 4. Moves to the print pressure control unit to the Minimum pressure print position, and stops for 1 second. 5. Returns the print pressure control unit to the home (center) position.		
0908	Print-pressure maintenance positioning. [RZ3 series only]		
	Brings the print pressure control unit to the point where the Pressure Spring can be removed for the machine maintenance purpose.		
No.	Data check	Details	
0921	Print-drum angle display	Displays the present print-drum angle. (example: 3600 = 360°)	
0923	Print-drum ink temperature display	Displays the temperature of the ink in the print drum in degrees Celsius [°C].	
0925	Ink remaining volume display	Displays the amount of ink left in the ink tube in percentage (%) [Ink TAG information]	
0926	Ink motor FG count [For the digit of 100 milliliter and up]	Displays the amount of ink used from ink tube for the digit of 100 milliliter and up. 1 = 100 milliliter (example: for 345.6 milliliter use, the display shows 3).	
0927	Ink motor FG count [For the digit of 10 milliliter and down]	Displays the amount of ink used from ink tube for the digit of 10 milliliter and down. 1 = 0.1 milliliter (example: for 345.6 milliliter use, the display shows 456).	
0928	Displays the Ink use starting date. [RZ3 series only]	Displays the Ink usage starting date. Example: For year 2004 February 28th, the display shows 2004 and then 0228 and repeats.]	
No.	Data setting	Details	
0940	Master loading sensor detection timing adjustment		
	Description	Adjusts the angle to detect master on the print drum by master loading sensor.	
	Setting	Range :	-20° to 10° from the programmed default position (+ delays the detection timing) -200 to +100 (example: 100 = 10°)
		Unit :	5 (0.5°)
		Default :	0 (0°)
0941	Print-drum Position-A adjustment		
	Description	Adjusts the print-drum Position-A stop position.	
	Setting	Range :	-4.0° to +4.0° from the programmed default position (+ moves drum forward) -40 to +40 (example: 5 = 0.5°)
		Unit :	5 (0.5°)
		Default :	0 (0°)

No.	Data setting	Details	
0942	Print-drum position-B adjustment		
	Description	Adjusts the print-drum Position-B stop position.	
	Setting	Range : Unit : Default :	±4.0° from the programmed default position (+ moves drum forward) -40 to +40 (example: 40 for 4°) 5 (0.5°) 0 (0°)
0943	Inking time adjustment (when over X% of ink is consumed from the ink tube.)		
	Description	Timer setting before the Replace Ink Tube LED lights (when the ink consumption amount from the tube is over X%). [Uses data from Ink TAG]	
	Setting	Range : Unit : Default :	5 to 60 seconds 1 (1 second) 10 (10 seconds)
0944	Inking time adjustment (right after the ink tube is replaced)		
	Description	Timer setting before the Replace Ink Tube LED lights (right after empty ink tube is replaced with a new one.)	
	Setting	Range : Unit : Default :	5 to 60 seconds 1 (1 second) 30 (30 seconds)
0945	Ink overflow detection frequency adjustment		
	Description	Sets the number of detection times for the overflow sensor to determine that an ink overflow has occurred in the print drum.	
	Setting	Range : Unit : Default :	1 to 200 times 1 (1 time) 50 (50 times)
0946	Inking time adjustment (when under X% of ink is consumed from the ink tube.)		
	Description	Timer setting before the Replace Ink Tube LED lights (when the ink consumption amount from the tube is under X%). [Uses data from Ink TAG]	
	Setting	Range : Unit : Default :	5 to 60 seconds 1 (1 second) 15 (15 seconds)
0947	Inking drum rotation quantity (while inking) after ink tube is pulled out and put back.		
	Description	Decides the drum rotation quantity while inking after the ink tube is pulled out and put back.	
	Setting	Range : Unit : Default :	1 to 10 (1 rotation to 10 rotations) 1 (1 rotation) 1 (1 rotation)
0948	Selection of X% for test modes No. 0943 and 0946.		
	Description	The X% selection relates to that of test modes No. 0943 and 0946.	
	Setting	Range: Unit : Default :	1 to 100 (1 to 100%) 1 (1%) 80 (80%)
0949	Print pressure setting for Proof-read printing (black ink) [RZ3 series only]		
	Description	Selects print pressure for printing the proof-read print after each master-making. (Black Ink)	
	Setting	0 : extra light 1: light 2: normal <Default > 3: dark 4: extra dark	
0950	Print pressure setting for Proof-read printing (color ink) [RZ3 series only]		
	Description	Selects print pressure for printing the proof-read print after each master-making. (Color Ink)	
	Setting	0 : extra light 1: light 2: normal <Default > 3: dark 4: extra dark	

No.	Data setting	Details	
0970	Vertical print position HP adjustment.		
	Description	Sets the HP (center) position of the vertical print position.	
	Setting	Range : Unit : Default :	±5mm from the sensor detected position (+ brings the image up) -50 to +50 (example: 15 = 1.5mm) 1 (0.1mm) 0 (0mm)
0972	Printing pressure HP adjustment [RZ3 series only]		
	Description	Offsets the HP (center) position of the printing pressure.	
	Setting	Range : Unit : Default :	±5000 pulses from the sensor detected position (+ brings the pressure up) -50 to +50 (example: 15 = 150 pulses) 1 (10 pulses) 0 (0 pulse)

6. Protected Area Test Modes

Test Mode No. 9874 must be activated to access into the Protected Area Test Modes.

CAUTION: Many hidden test modes used by the Factory are included in the Protected Area.
Activate only those test modes listed below.

No.	Unit check		Details	
1102	Paper size VR adjustment			
	Sets a VR value at paper guide fence width of 105 mm (A6 paper width).			
1103	Paper size VR adjustment			
	Sets a VR value at paper guide fence width of 297 mm (A3 paper width).			
No.	Data clear		Details	
1193	REv Data Initialize			
	Initializes the REv data memory area			
No.	Data setting		Details	
1200	REv Event Selection			
	Description		Selects the REv events to be downloaded.	
	Setting	Range :	0 : All events & All errors 1 : All the errors only 2 : All errors, and Master-making and printing start points 3 : Manual events only	
		Default :	2 : All errors, and Master-making and printing start points	
1210	Drum Code Entry			
	Description		Sets the print drum information on the EEPROM of the Drum PCB.	
	Setting	Range :	0 to 255 [RZ2 series] 18: B4 19: A4/Letter 22: Legal/Foolscap [RZ3 series] 33: A3 35: A4/Letter 37: Ledger	
		Default :	0	
1211	Drum Serial Code Entry 1			
	Description		Inputs the first 4 -digits of the print drum serial number	
	Setting	Range :	0 to 9999	
		Unit :	1	
1212	Drum Serial Code Entry 2			
	Description		Inputs the last 4 -digits of the print drum serial number	
	Setting	Range :	0 to 9999	
		Unit :	1	
	Setting	Default :	0	

No.	Data setting	Details
1214	Drum Color Code Entry	
	Description	Sets the print drum color information on the EEPROM of the Drum PCB.
	Setting	Range : 0: (not specified) 1: Black 2: Blue 3: Medium Blue 4: Red 5: Bright Red 6: Riso Federal Blue 7: Purple 8: Riso Marine Red 9: Burgundy 10: Green 11: Teal 12: Brown 13: Yellow 14: Light Grey 15: Grey 16: Fluorescence Pink 17: Fluorescence Orange 18: Orange 19: Flat Gold 20: Hunter Green 21: Crimson 30: Custom 31: Order (with specified paper) 32: Order (without specified paper) 63: Any Color Default : 0 (not specified)
1220	Scanner Adjustment (1) Sub-Scanning [for RZ3 series]	
	Description	Input the number imprinted on the sticker on the Scanner Unit.
	Setting	Range : Unit : Default : 68 to 188 [RZ3 series] 1 128
1221	Scanner Adjustment (2) Main-Scanning [for RZ3 series]	
	Description	Input the number imprinted on the sticker on the Scanner Unit.
	Setting	Range : Unit : Default : 92 to 164 [RZ3 series] 1 128
1222	Scanner Adjustment (3) Sub-Scanning Ratio [for RZ3 series]	
	Description	Input the number imprinted on the sticker on the Scanner Unit.
	Setting	Range : Unit : Default : 0 to 100 1 50
1223	Scanner Adjustment (4) Offset [for RZ3 series]	
	Description	Input the number imprinted on the sticker on the Scanner Unit.
	Setting	Range : Unit : Default : 0 to 255 1 128 Note: The input number changes after the offset adjustment is made. Use the newly displayed number from the next offset adjustment for that one particular scanner unit.

No.	Data setting	Details	
1224	Scanner Adjustment (5) Gain [for RZ3 series]		
	Description	Input the number imprinted on the sticker on the Scanner Unit.	
	Setting	Range : Unit : Default :	0 to 255 1 128 Note: The input number changes after the gain adjustment is made. Use the newly displayed number from the next gain adjustment for that one particular scanner unit.
1229	RLP Mode Enable Control [for RZ3 series]		
	Description	Activates or deactivates the RLP feature.	
	Setting	0 : Disabled (default) 1: Enabled	
1233	TPH master-making horizontal position adjustment		
	Description	Sets the TPH master-making position to the center	
	Setting	Range : Unit : Default :	-23 to +23 (-2.3 to +2.3mm) [RZ3 series] -30 to +30 (-3.0 to +3.0mm) [RZ2 series] (+ brings the master-making image to the left) 1 (0.1 mm) 0 (0 mm)
1234	TPH resistance input		
	Description	Sets TPH resistance.	
	Setting	Range : Unit : Default :	1200 ohm to 2300 ohm [RZ3 series] 1200 ohm to 1900 ohm [RZ2 series] 1 (1 ohm) 1200 (1200 ohm)

7. Test Modes for optional items

< AF Unit >

No.	Sensor switch check	Detection status	
3000	AF-unit joint signal check	AF connected	
3001	AF Original registration sensor	Blocked (original detected)	
3002	AF Original IN sensor	Blocked (original detected)	
3003	AF Original OUT sensor	Blocked (original detected)	
3004	AF original detection sensor	Sensor light reflected back (original detected)	
No.	Motor, solenoid	Remarks	
3030	AF read pulse-motor CW	Activates the AF read pulse-motor in original feeding direction.	
3031	AF read pulse-motor CCW	Activates the AF read pulse-motor in reverse direction.	
No.	Unit check	Details	
3041	AF one cycle action with no Auto Base Control		
	Performs one AF scanning cycle. 1. Picks up original. 2. Scanner unit moves to home position. 3. Shading compensation. 4. Scanner unit moves to scanning position. 5. Feeds and ejects the original. 6. Scanner unit moves back to the home position.		
3042	AF original feed action		
	Performs AF original feed operation 1. Picks up original. 2. Feeds and ejects the original.		
No.	Data setting	Details	
3070	Scanner unit scanning position adjustment (AF scanning) [RZ2 series]		
	Description	Adjusts the position of the scanner unit for AF scanning.	
	Setting	Range :	±6.0mm from the programmed default position. (+ moves the scanner unit back and moves the image up.) 0 to ±60 (example: 18 = 1.8 mm)
		Unit : Default :	1 (0.1 mm) 0 (0 mm)
3070	Mirror carriage scanning position adjustment (AF scanning) [RZ3 series]		
	Description	Adjusts the position of the mirror carriage for AF scanning.	
	Setting	Range :	±6.0mm from the programmed default position. (+ moves the scanner unit back and moves the image up.) 0 to ±60 (example: 18 = 1.8 mm)
		Unit : Default :	1 (0.1 mm) 0 (0 mm)
3071	Mirror carriage position adjustment for Auto-Base-Control (AF scanning) [RZ3 series]		
	Description	Adjusts the position of the mirror carriage for AF scanning during ABC control.	
	Setting	Range :	0mm to +3.0mm from the programmed default position. (+ moves the carriage up.) 0 to 30 (example: 18 = 1.8mm)
		Unit : Default :	1 (0.1 mm) 0 (0 mm)

No.	Data setting	Details
3072	Scanning horizontal centering position adjustment. (AF scanning) [RZ2 series]	
	Description	Adjusts the horizontal scanning position when the original is scanned using the AF. [RZ2 series]
	Setting	Range : $\pm 1.5\text{mm}$ from the programmed default position. (+ moves the image to the left.) 0 to ± 15 (example: 15 = 1.5 mm) Unit : 5 (0.5 mm) Default : 0 (0 mm)
3072	Scanning horizontal centering position adjustment. (AF scanning) [RZ3 series]	
	Description	Adjusts the horizontal scanning position when the original is scanned using the AF. [RZ3 series]
	Setting	Range : $\pm 3.0\text{mm}$ from the programmed default position. (+ moves the image to the left.) 0 to ± 30 (example: 25 = 2.5 mm) Unit : 5 (0.5 mm) Default : 0 (0 mm)
3073	Scanning start-position adjustment. (AF scanning)	
	Description	Adjusts the scanning start position against the original when the original is scanned using the AF. (Adjusts how much area to skip from the top of the original when the scanning starts.)
	Setting	Range : $\pm 6.0\text{mm}$ the programmed default position. (+ skips more area from the top of the original.) 0 to ± 60 (example: 58 = 5.8mm) Unit : 1 (0.1mm) Default : 0 (0mm)
3074	Scanning-speed adjustment to control Elongation & Shrinkage in scanning. (AF scanning)	
	Description	Adjusts the speed of the AF-Read pulse motor to control the speed of the Original through the AF.
	Setting	Range : $\pm 5.0\%$ from the programmed default speed. (- shrinks the image.) 0 to ± 50 (example: 50 = 5%) Unit : 1 (0.1%) Default : 0 (0%)

< Job Separator >

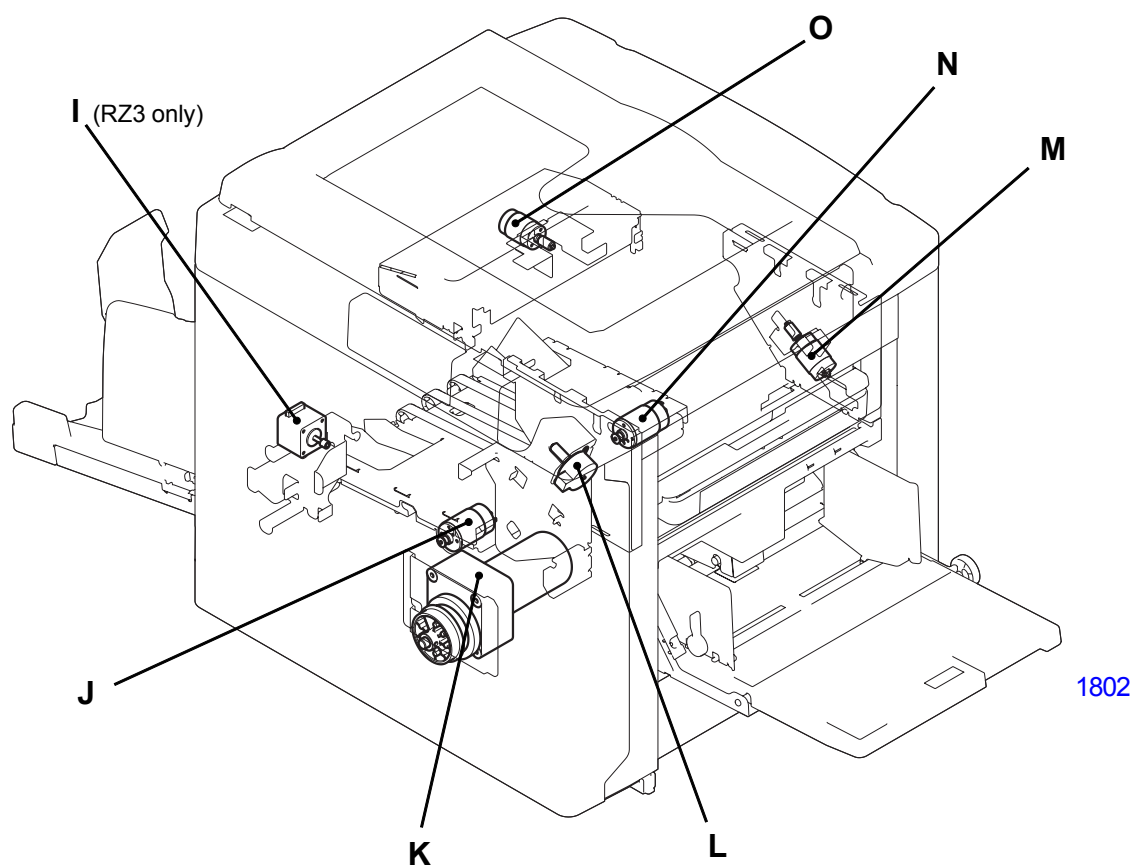
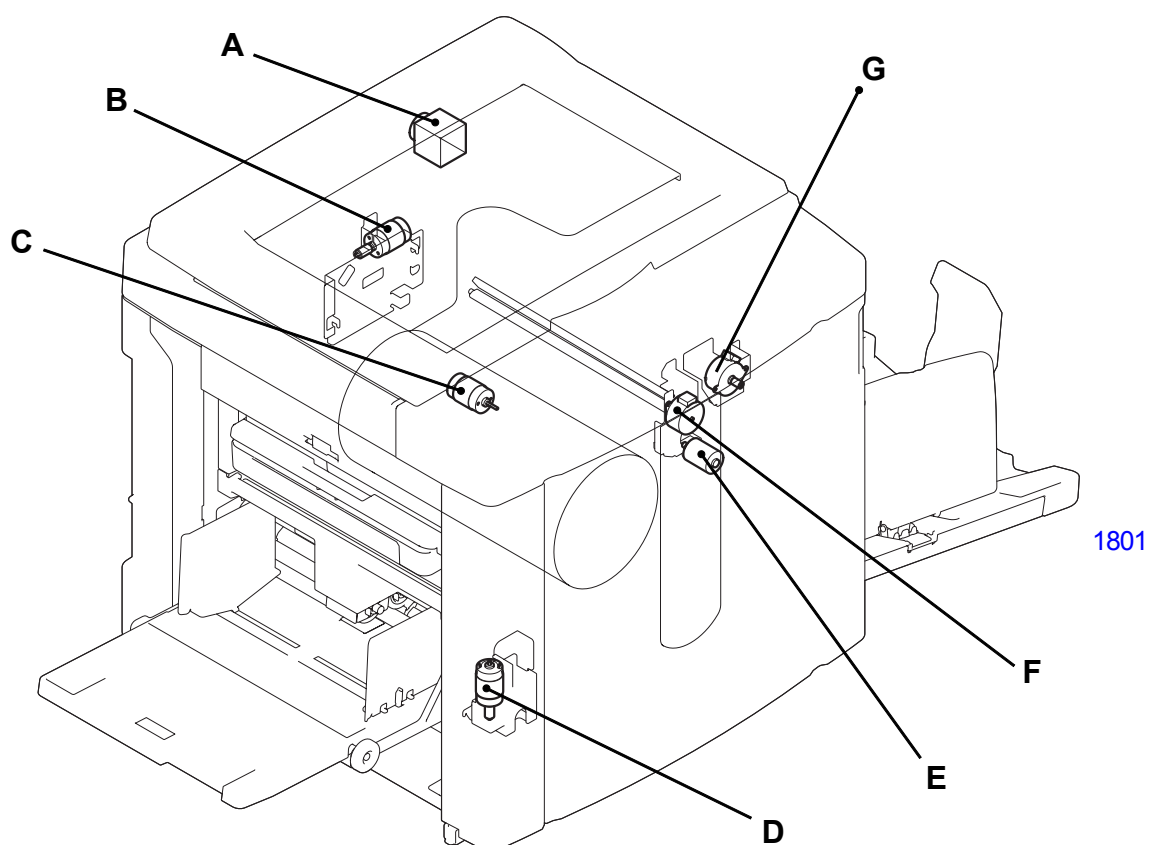
No.	Sensor switch check	Detection status
3100	Job separator tape jam sensor	Jammed tape is detected
3101	Job separator tape detection sensor	Tape is detected
3102	Job separator power switch	Power is supplied to the Job separator
3103	Job separator connection signal	Job separator is connected
No.	Unit check	Details
3140	Tape output	Outputs one tape.
No.	Data setting	Details
3170	Stamping quantity	
	Description	Sets number of times the stamper stamps per one tape cut.
	Setting	0: No stamping <Default > 1: One stamping 2: Two stamping
3171	Tape jammed message "activate or deactivate"	
	Description	Activates or deactivates the Tape Jam message while using the Job Separator.
	Setting	0: Deactivate 1: Activate <Default >

CHAPTER 18: ELECTRICAL COMPONENTS

Contents

1. Motor	18-2
2. Fan, Solenoid, Solenoid Clutch	18-4
3. Photoelectric Sensors	18-6
4. Other Sensors, Switches, Volume Dial	18-8
5. AF (auto-document feeder) - Option	18-10

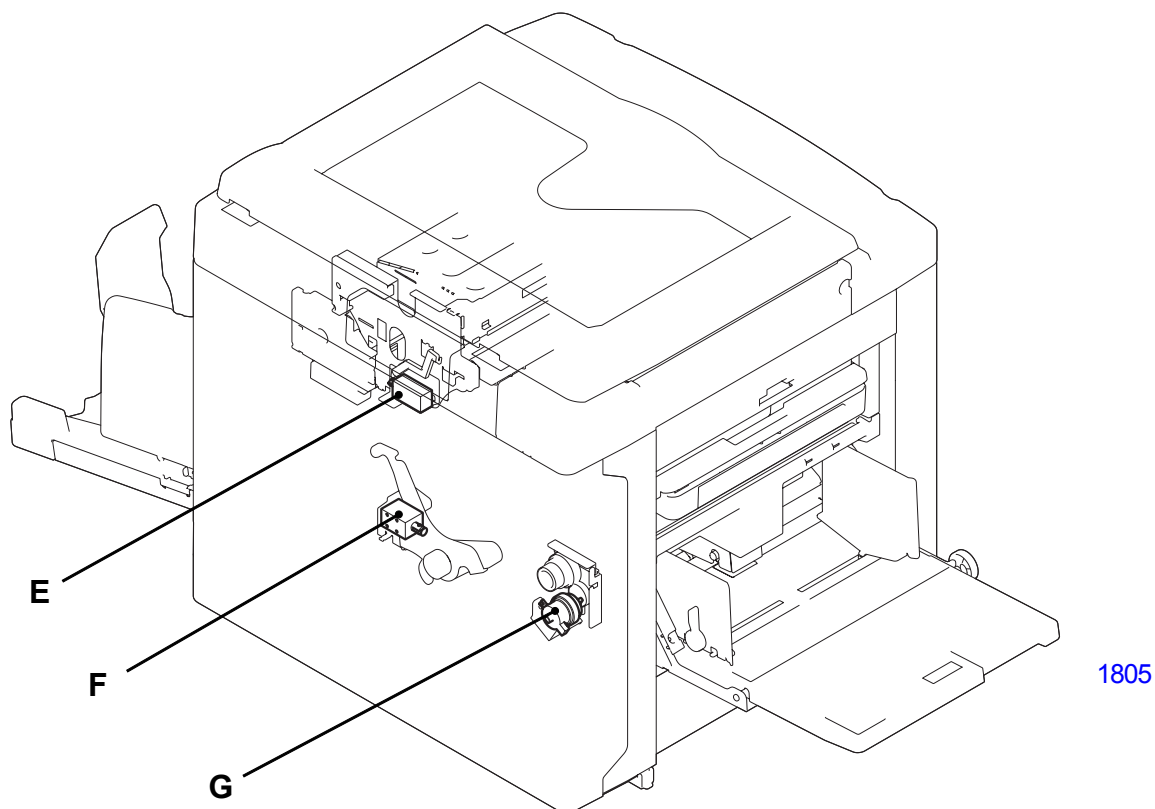
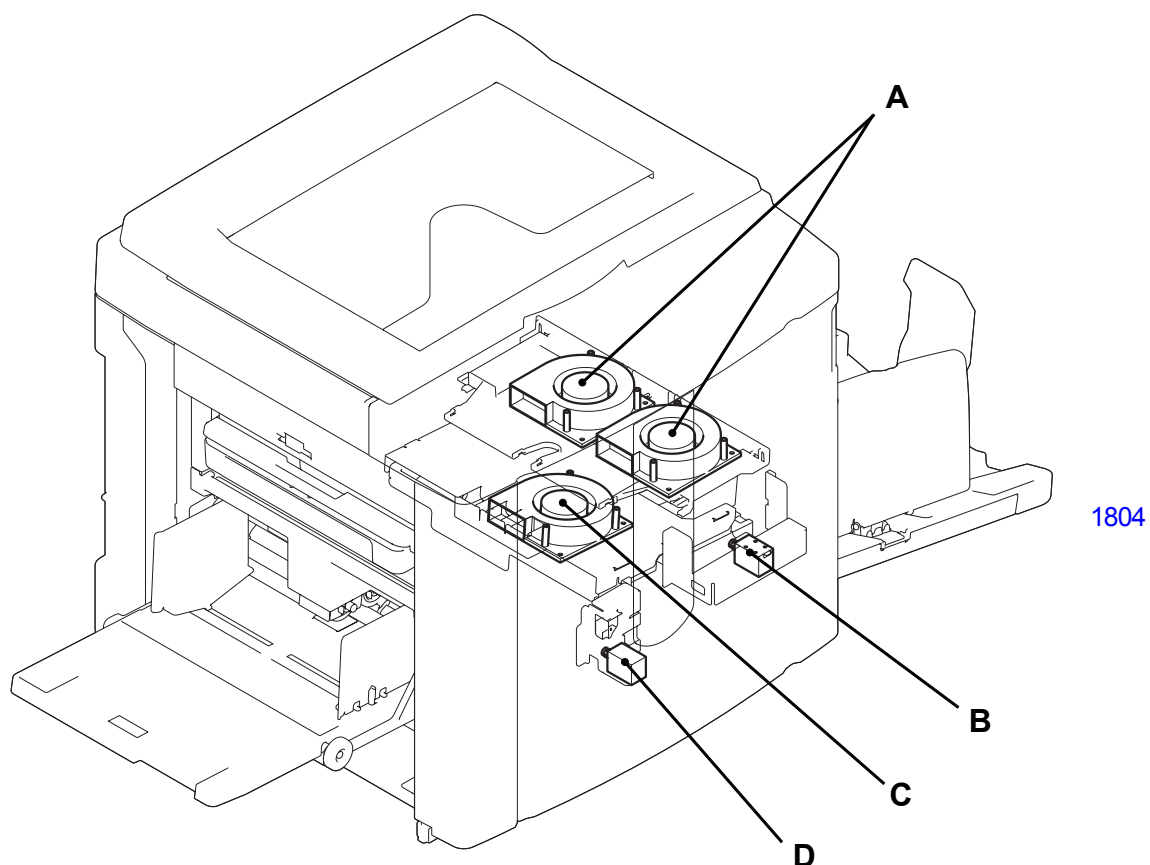
1. Motor



Item	Part Name	Function	Test Mode No.
A	Read pulse motor	Drives the Lamp carriage and Mirror carriage.	0284
B	Clamp motor	Drives the Clamp opening cam and Position-A compensation plate.	0863 0864
C	Inking motor	Drives the Ink pump.	----
D	Elevator motor	Elevates the Paper feed tray up and down.	0682
E	Cutter motor	Activates the cutter unit.	0480
F	Load pulse motor	Drives the Load roller and Clamping guide roller.	0464
G	Write pulse motor	Drives the Write roller.	0462 0463
H	-----	-----	-----
I	Pressure control pulse motor	Changes the printing pressure.	0905
J	Paper ejection motor	Drives the Suction unit belt.	0660
K	Main motor	Drives the Main drive.	0861
L	Print registration pulse motor	Changes the Vertical print position.	0901
M	Master compression motor	Drives the Master compression plate.	0493
N	Master removal motor	Drives the Master disposal rollers.	0470
O	Thermal pressure motor	Elevates the TPH up and down.	0460 0461

1803

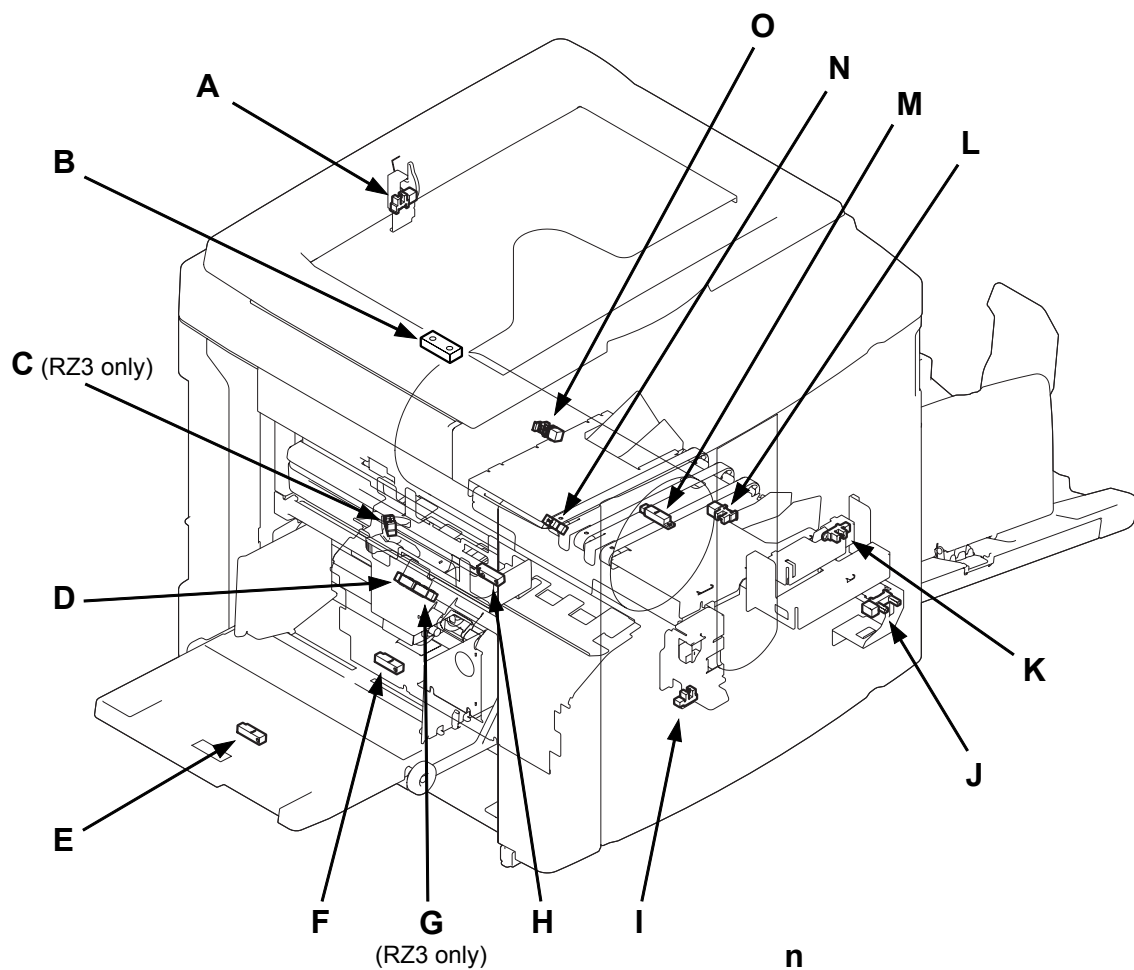
2. Fan, Solenoid, Solenoid Clutch



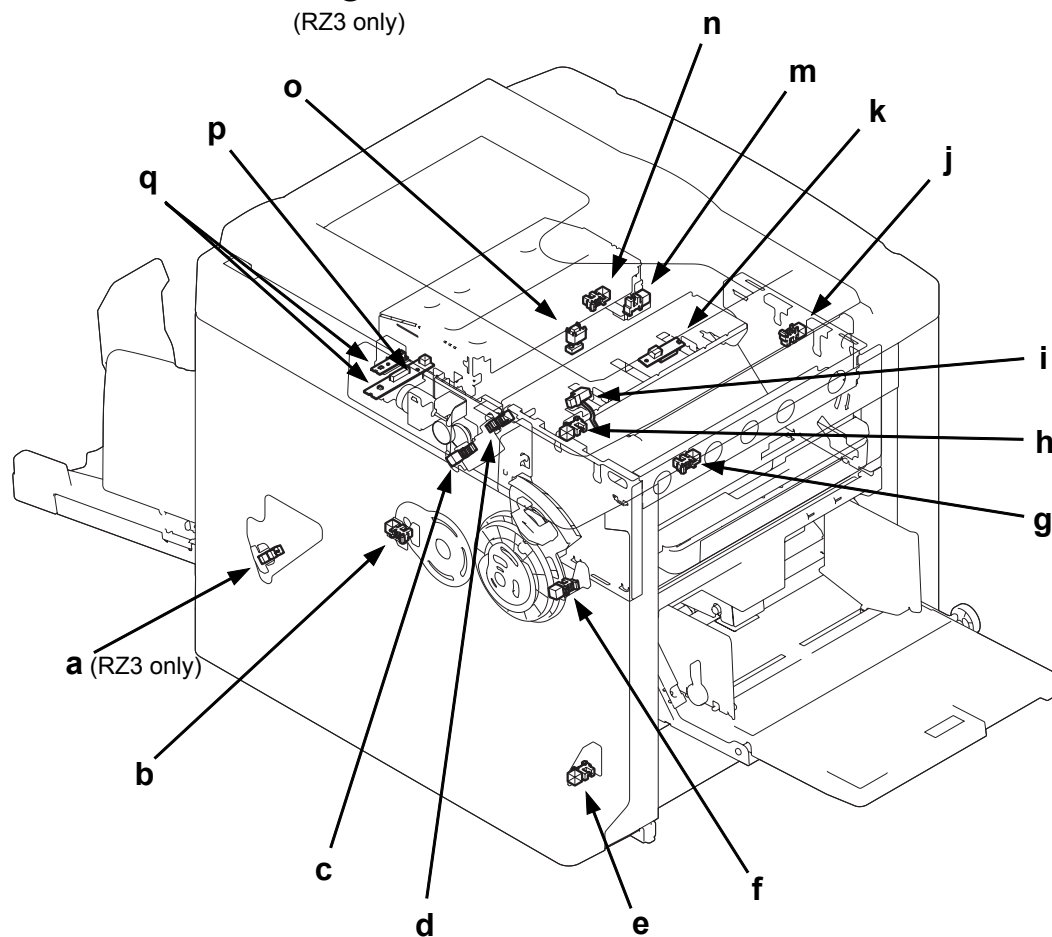
Item	Part Name	Function	Test Mode No.
A	Separation fan	Assists separation of the paper from the Print drum.	0662
B	Master making unit lock solenoid	Locks or unlocks the Master-making unit.	0488
C	Suction fan	Pulls the paper onto the Suction unit.	0661
D	Print drum lock solenoid	Locks or unlocks the Print drum.	0885
E	Master stocker solenoid	Up-down motion of the Master stocker guide plate.	0489
F	Pressure solenoid	ON/OFF of the Pressure roller UP/DOWN motion.	0886
G	Paper feed clutch	Drive transfer to the Scraper and Pickup rollers.	0688

[1806](#)

3. Photoelectric Sensor



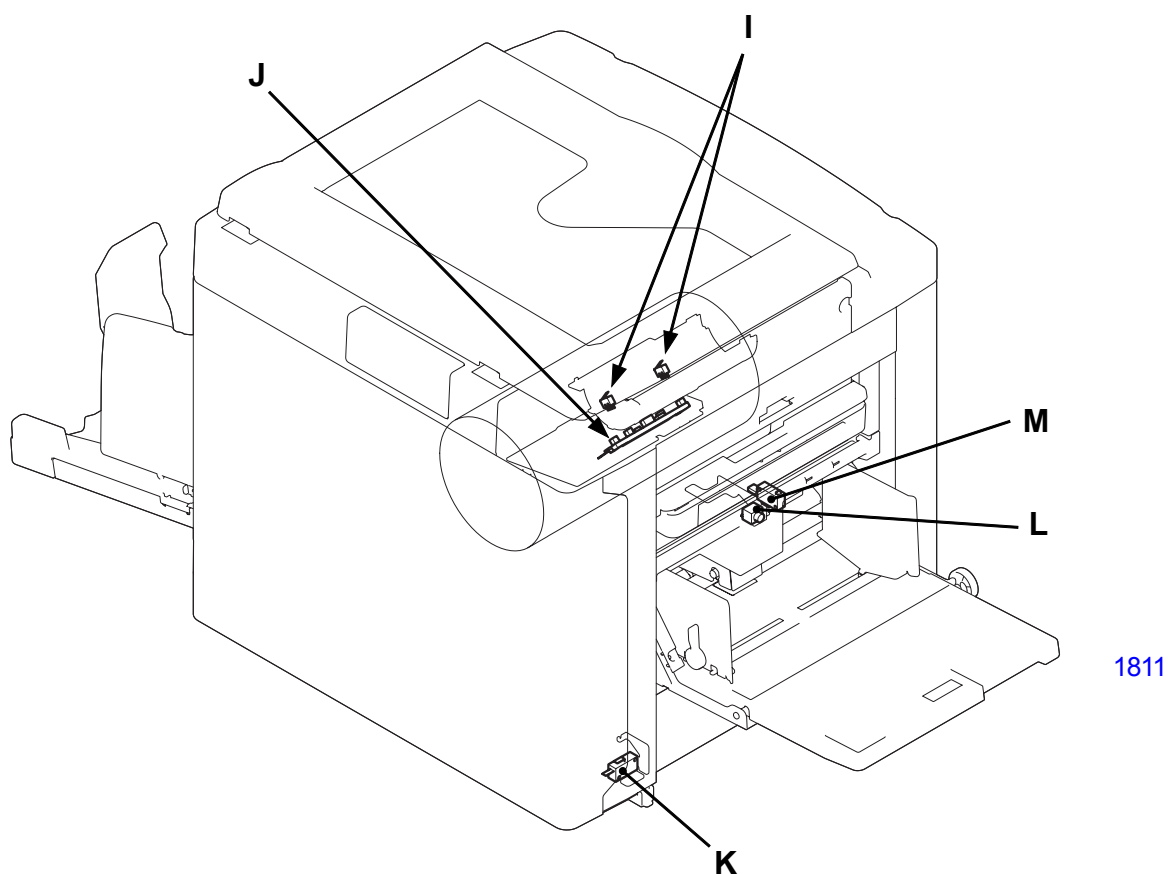
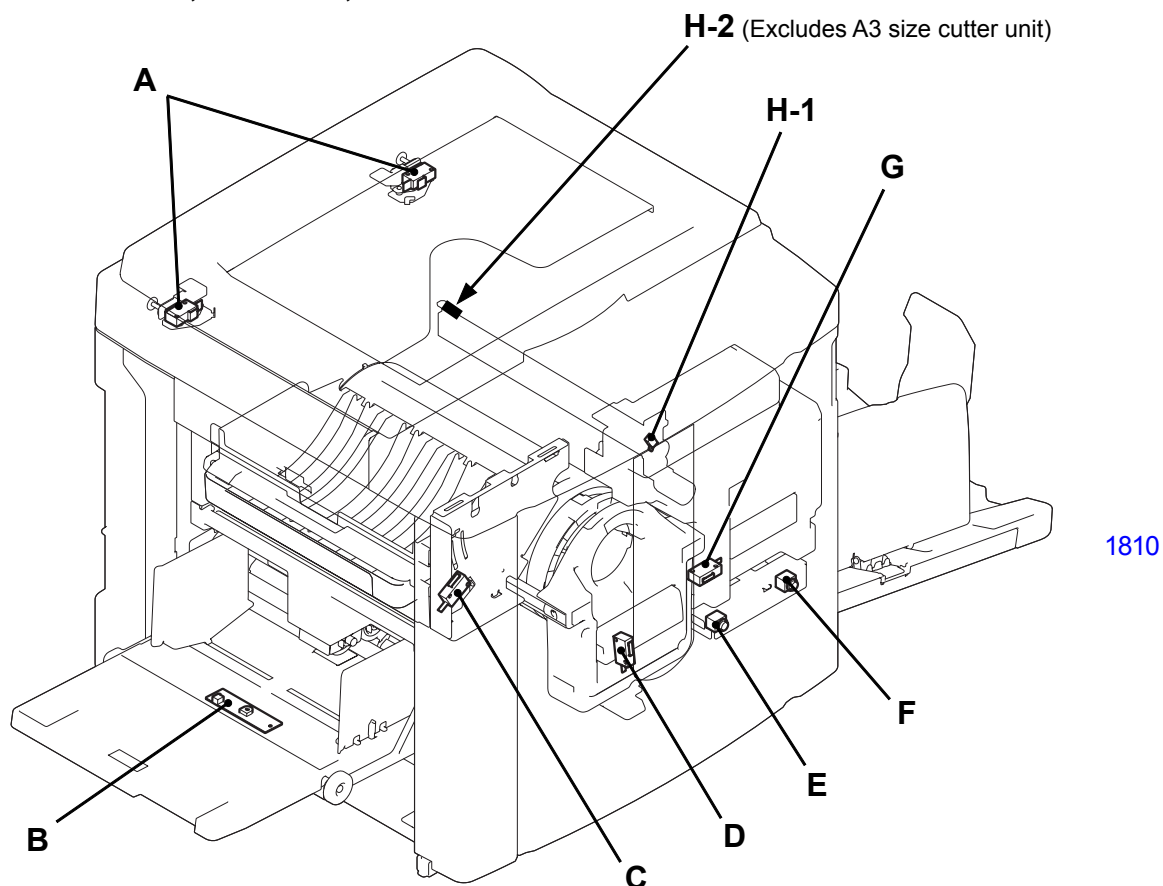
1807



1808

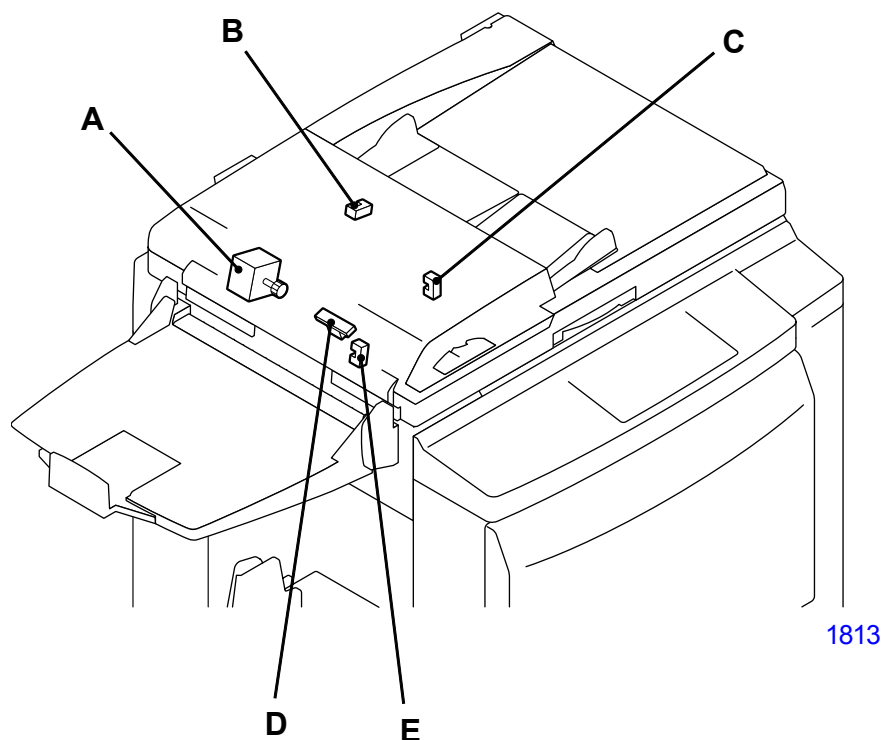
Item	Part Name	Sensor Type	Function	Test Mode No.
A	Stage cover sensor	Interruptive	Checks the open/close condition of the Stage cover.	0209
B	FB original detection sensor	Reflective	Checks the presence of the original on the Stage glass.	0201
C	Paper feed pressure sensor	Interruptive	Checks the position of the Paper feed pressure lever.	0614
D	Upper limit sensor B	Interruptive	Detects the Paper feed tray upper limit position.	0603
E	Paper size detection sensor	Reflective	Detects the length of the paper on the Paper feed tray.	0601
F	Paper detection sensor	Reflective	Detects the presence of the paper on the Paper feed tray.	0600
G	Upper limit sensor A	Interruptive	Detects the Paper feed tray upper limit position.	0602
H	Paper sensor	Reflective	Checks the 1st paper feed area paper feed condition.	0605
I	Drum lock sensor	Interruptive	Checks the Print drum lock condition.	0807
J	Front cover set sensor	Interruptive	Checks the Front door open/close condition.	0817
K	Master making unit lock sensor	Interruptive	Checks the Master-making unit lock condition.	0408
L	-----	-----	-----	-----
M	Paper ejection sensor	Reflective	Checks the paper ejection area paper receiving condition.	0606
N	Paper ejection FG sensor	Interruptive	Checks the speed of Paper ejection motor.	0612
O	Inking motor FG sensor	Interruptive	Checks the rotation of the Inking motor.	0812
a	Pressure HP sensor	Interruptive	Detects the print pressure home position.	0830
b	Position B sensor	Interruptive	Detects the machine B-position.	0801
c	Clamp sensor B	Interruptive	Checks the Clamp unit operation.	0804
d	Clamp sensor A	Interruptive	Checks the Clamp unit operation.	0803
e	Lower limit sensor	Interruptive	Detects the Paper feed tray lower limit position.	0604
f	Vertical centering sensor	Interruptive	Detects the home position of the vertical print position.	0831
g	Master disposal FG sensor	Interruptive	Checks the speed of Master disposal motor.	0426
h	Master compression plate HP sensor	Interruptive	Detects the home position of the Master compression plate.	0421
i	Master disposal jam sensor	Actuator	Checks the master disposal area master disposal condition.	0420
j	Compression FG sensor	Interruptive	Checks the Master compression plate position and the speed of the Master compression motor.	0425
k	Master sensor	Reflective	Looks for master on the drum.	0806
m	Master making unit upper cover set sensor	Interruptive	Checks for the set condition of the M-M-unit upper cover.	0407
n	Thermal pressure sensor	Interruptive	Checks the up/down position of the TPH.	0406
o	Master positioning sensor	Reflective (prism)	Detects the master waiting position, and checks the master cut status.	0400
p	Master detection sensor	Reflective	Looks for master set in the Master-making unit.	0401
q	Master end sensor	Transmittive	Detects the end of the master material.	0402

4. Other Sensor, Switches, Volume Dial



Item	Part Name	Function	Test Mode No.
A	Serviceman safety switch	Checks the presence of the Rear cover. Acts as interlock safety switch.	0005
B	Paper width potentiometer	Detects the width of the paper on the Paper feed tray.	Refer to page 4-25
C	Master disposal box safety switch	Detects the presence of the Master disposal box. Acts as interlock safety switch.	0423
D	Print drum safety SW	Detects the presence of the Print drum. Acts as interlock safety switch.	0820
E	Print drum release button	Releases the lock on the Print drum.	0818
F	Master making unit release button	Releases the lock on the Master making unit.	0410
G	Master making unit safety switch	Detects the presence of the Master making unit. Acts as interlock safety switch.	0409
H-1	Cutter HP switch	Detects the home position of the Cutter blade.	0403
H-2	Cutter stop position switch	Detects the stop position of the Disc shuttle cutter. (Excludes A3 size Cutter unit)	0404
I	Ink cartridge set switch	Detects the presence of the Ink cartridge.	0811
J	Ink sensor Overflow sensor	Detects the bead of the Ink. Detects the Ink overflow.	0809 0810
K	Paper feed tray lower safety switch	Immediate stop of the Elevator motor.	0608
L	Paper feed tray button	Elevates the Paper feed tray up or down by pressing this button.	0609
M	Paper feed tray upper safety switch	Immediate stop of the Elevator motor.	0607

1812

5. AF (auto-document feeder) - Option

Item	Part Name	Function	Test Mode No.
A	AF read pulse motor	Drives the original transfer rollers on AF unit.	3030 3031
B	AF original detection sensor	Detects the presence of the Original.	3004
C	AF registration sensor	Checks the Original transfer status.	3001
D	AF read sensor	Checks the Original transfer status.	3002
E	AF original ejection sensor	Checks the Original ejection out of AF unit.	3003

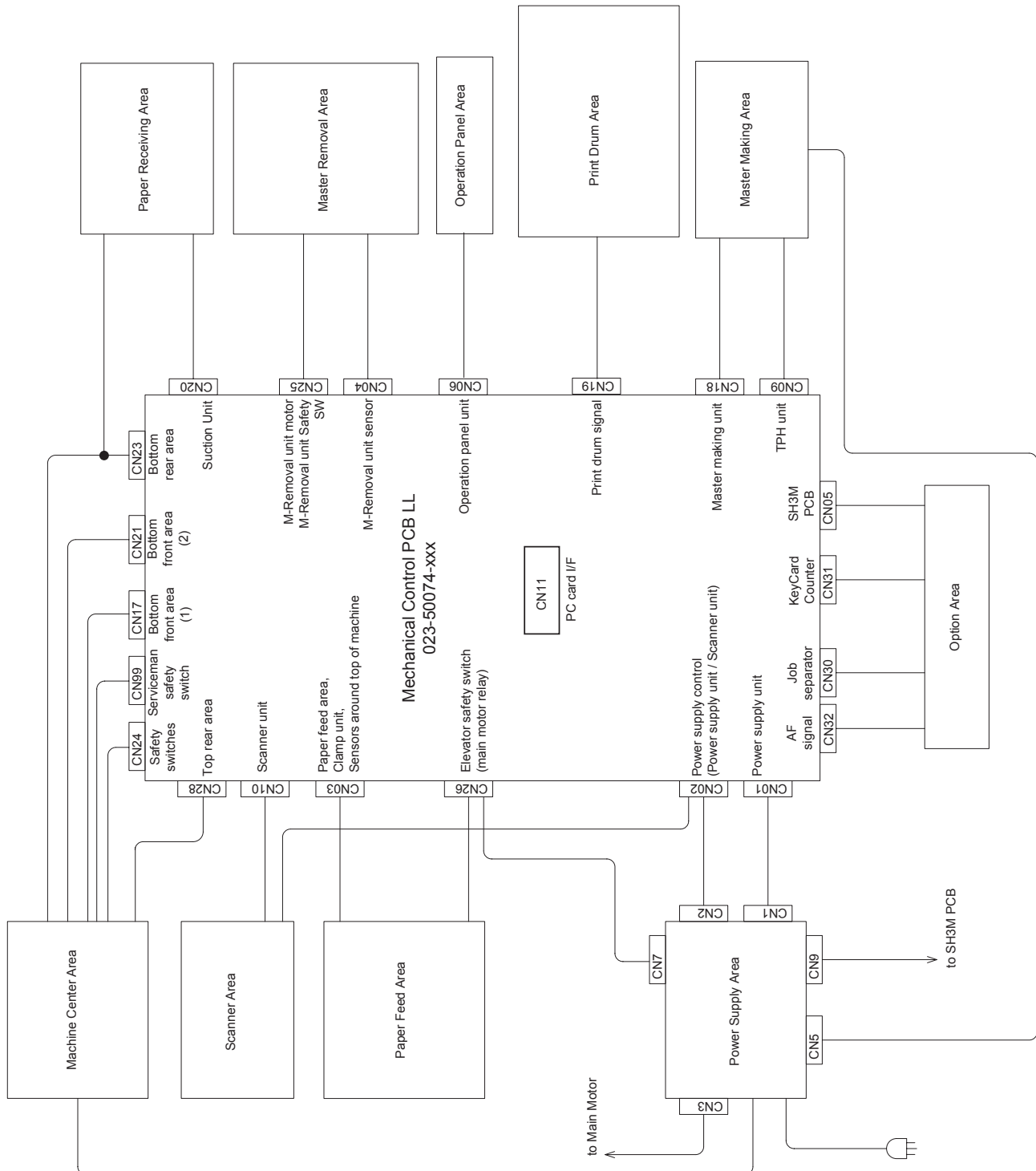
1814

CHAPTER 19: WIRING DIAGRAM (RZ2 SERIES)

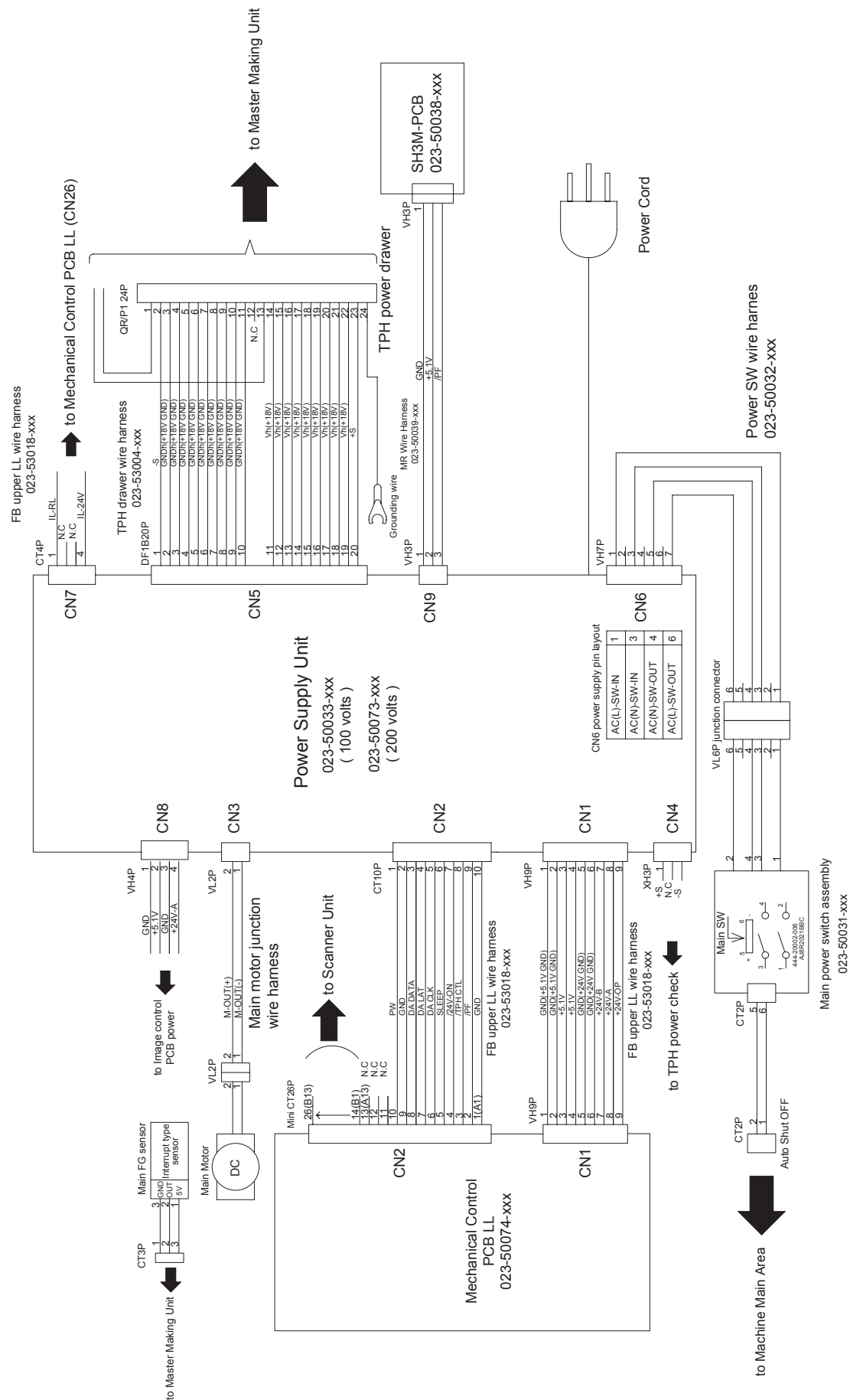
Contents

- 1. Connection between PCBs 19-2
- 2. Power supply 19-3
- 3. Master making area 19-4
- 4. Paper feed area 19-5
- 5. Scanning area 19-6
- 6. Paper receiving area 19-7
- 7. Main components area 19-8
- 8. Master removal area 19-9
- 9. Operation panel area 19-10
- 10. Print drum area 19-11
- 11. Optional components 19-12
- 12. Fuses 19-13

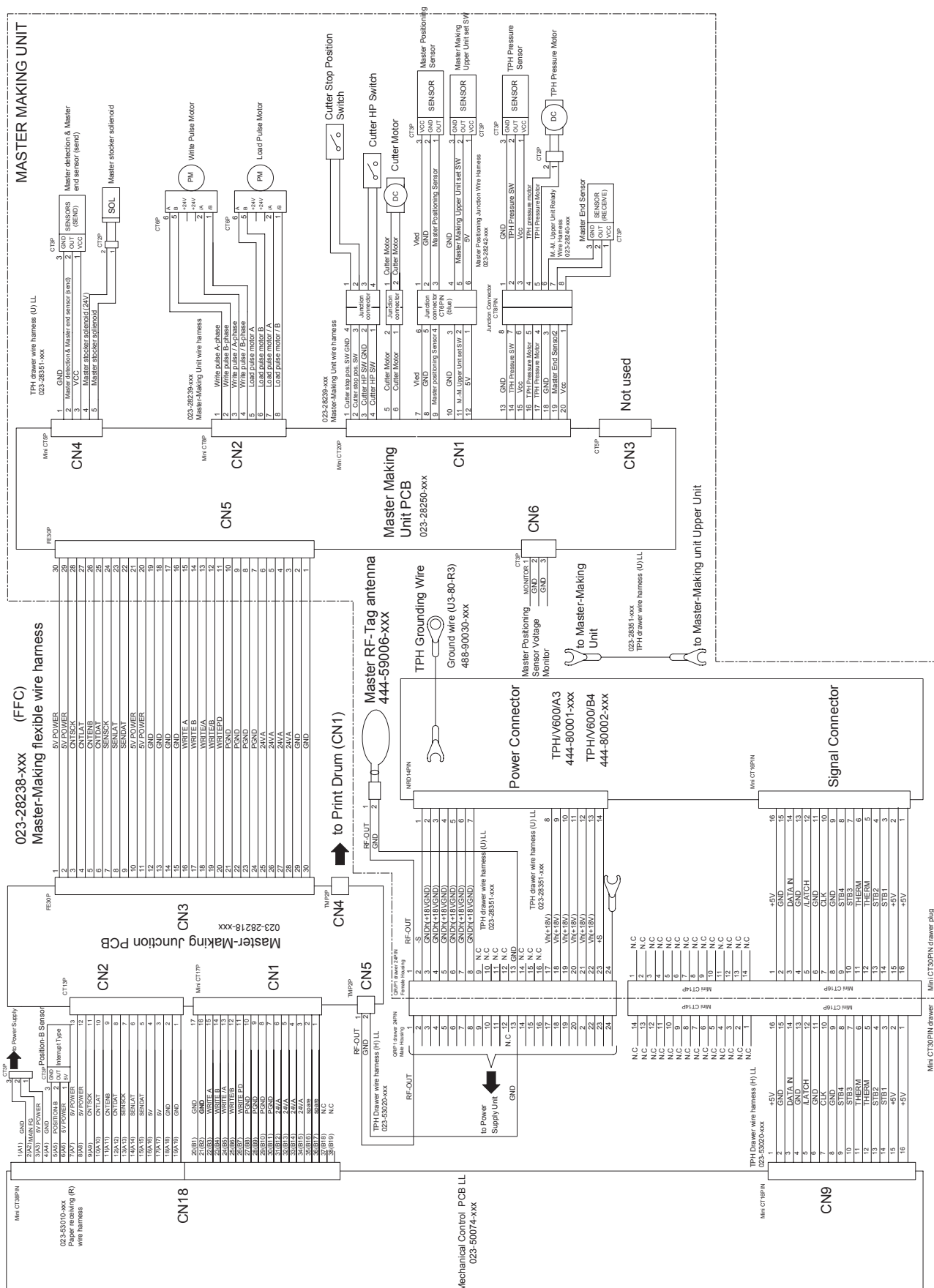
1. Connection between PCBs



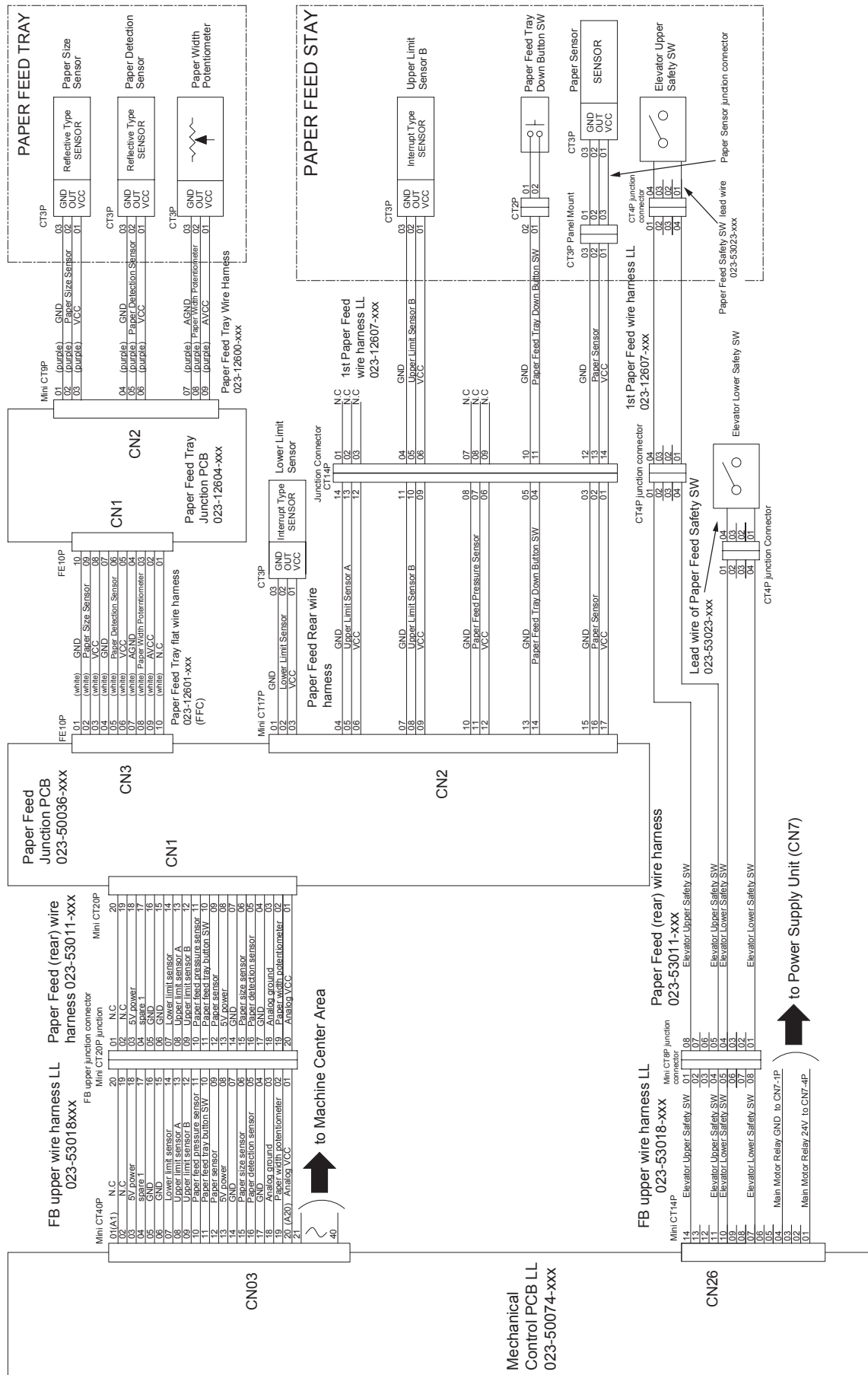
2. Power supply



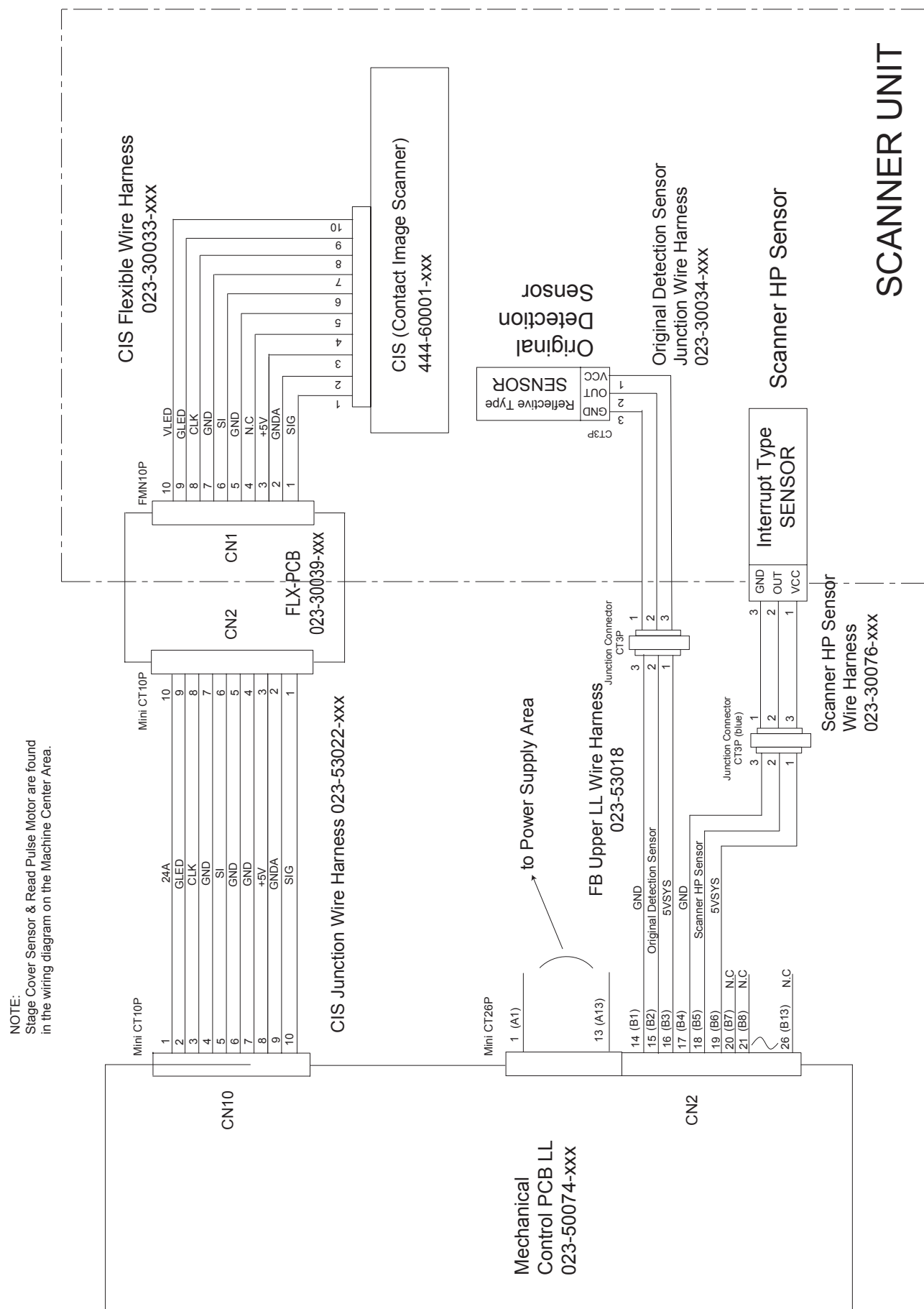
3. Master making area



4. Paper feed area

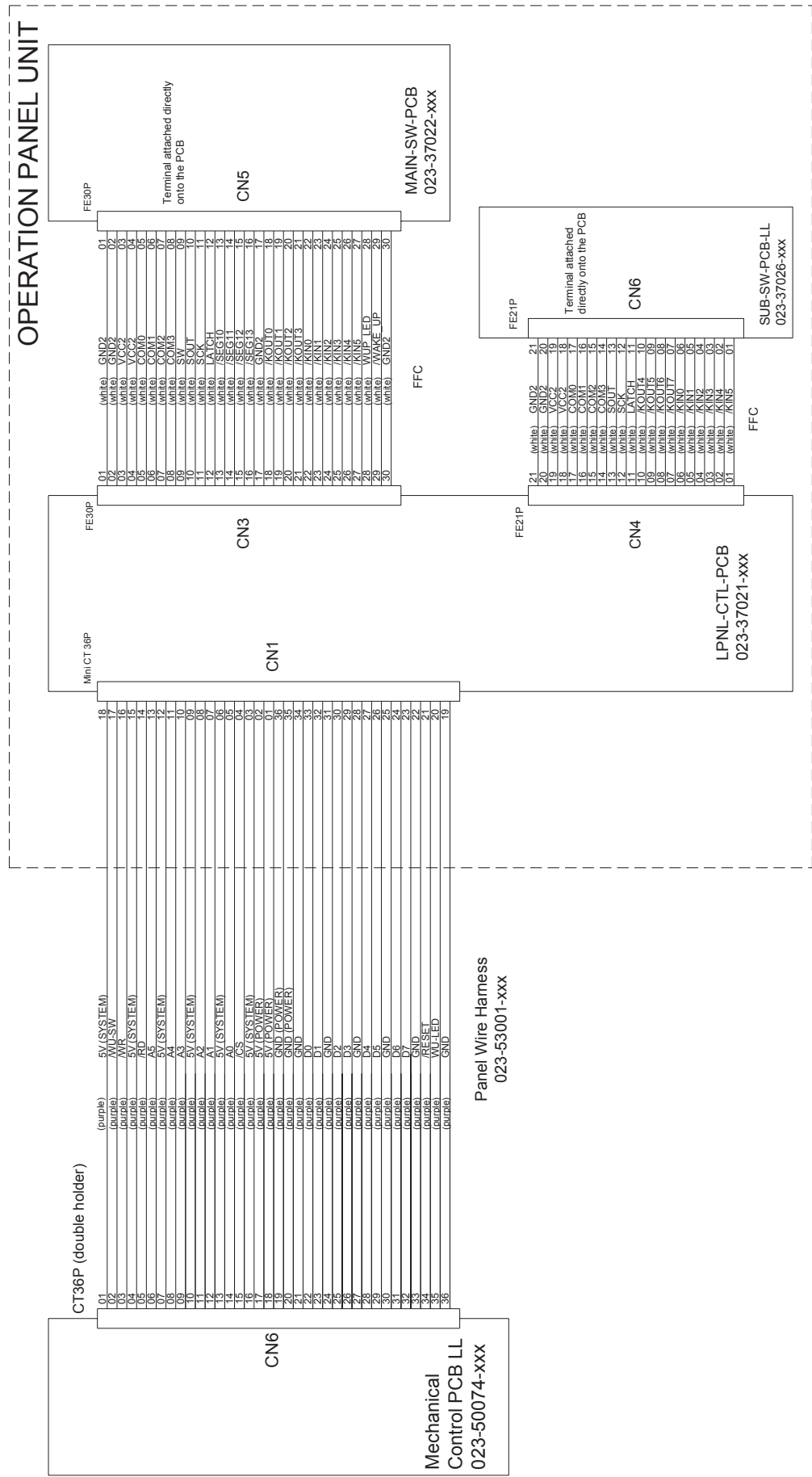


5. Scanning area

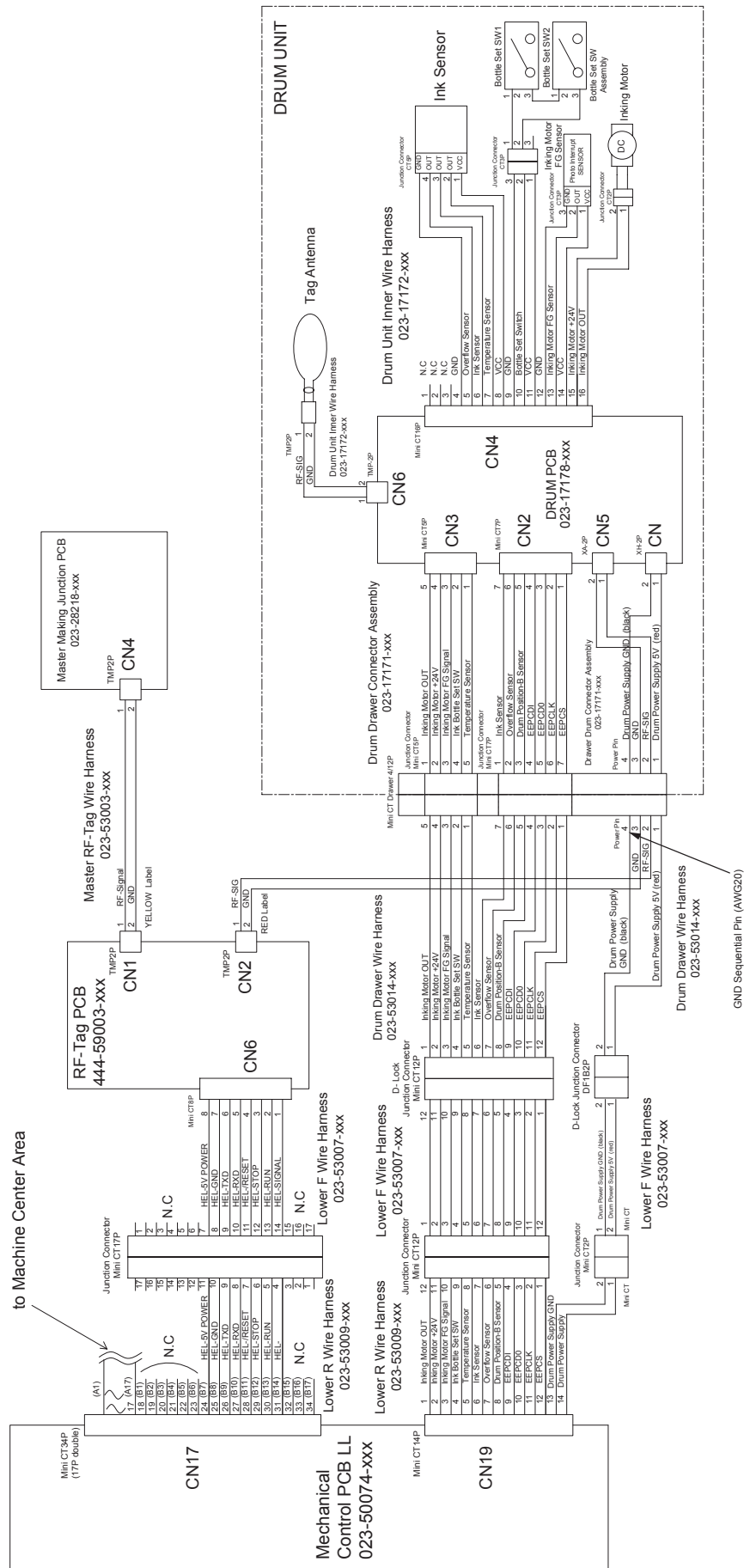




9. Operation panel area



10. Print drum area



12. Fuses

Fuse No.	Circuit	Faulty Fuse	Related Components
F001 (100V machine) 125V 10A (200V machine) 250V 6.3A	Main primary	Power not provided	Power to the main unit
F101 250V 3.15A	24V-A	T98-947 24V-A is not provided	Elevator motor Thermal pressure motor Cutter motor Read pulse motor Print registration pulse motor Load pulse motor Write pulse motor Suction fan Master stocker solenoid Pressure solenoid Print drum lock solenoid Paper feed clutch
F102 25V 6.3A	24V-B	T98-948 24V-B is not provided	Master compression motor Clamp motor Paper ejection motor Master removal motor Inking motor Separation fan Master-making unit lock solenoid Copy counter Master counter
F103 250V 3.15A	24V-OP (option)		-----

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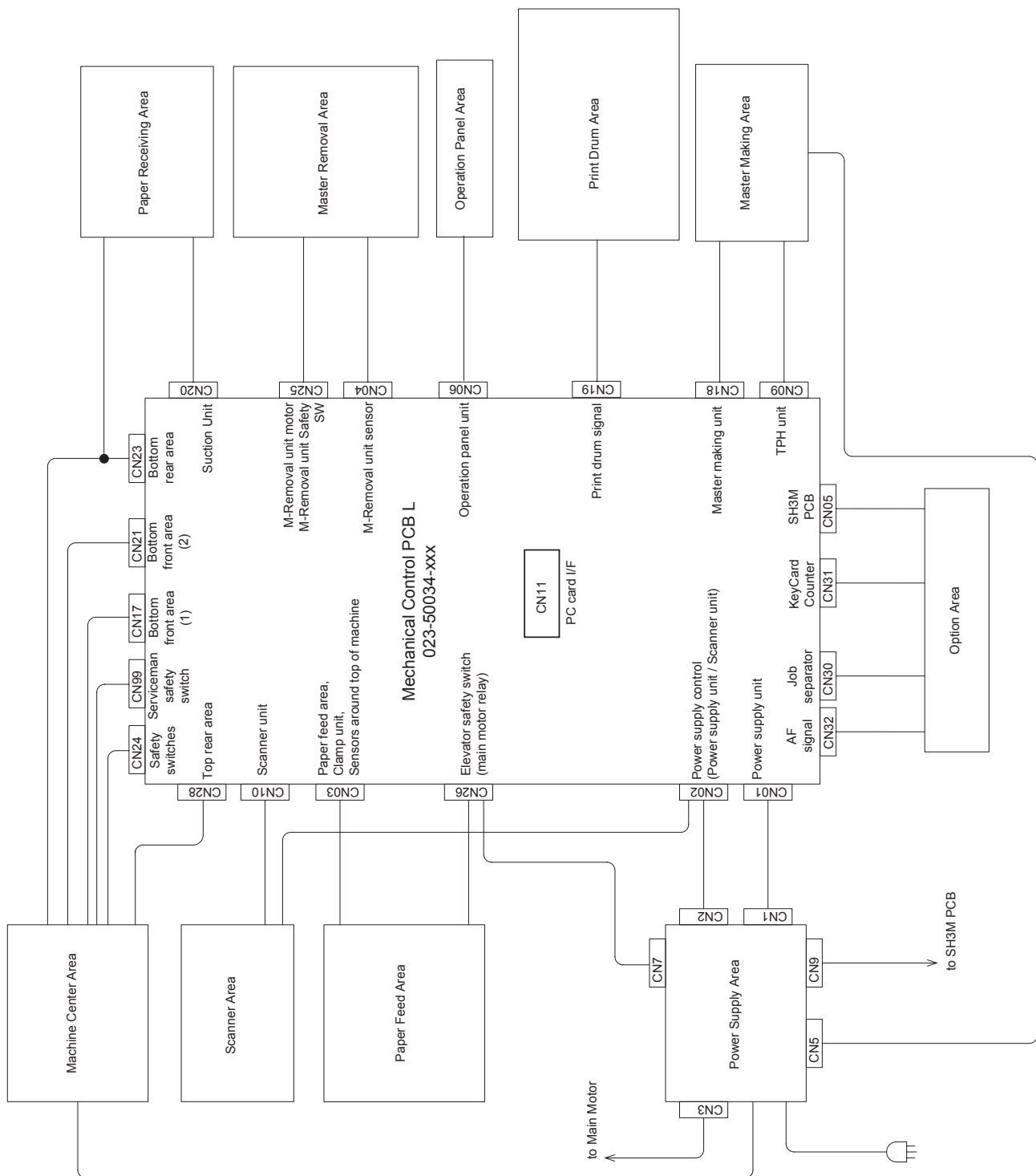
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CHAPTER 20: WIRING DIAGRAM (RZ3 SERIES)

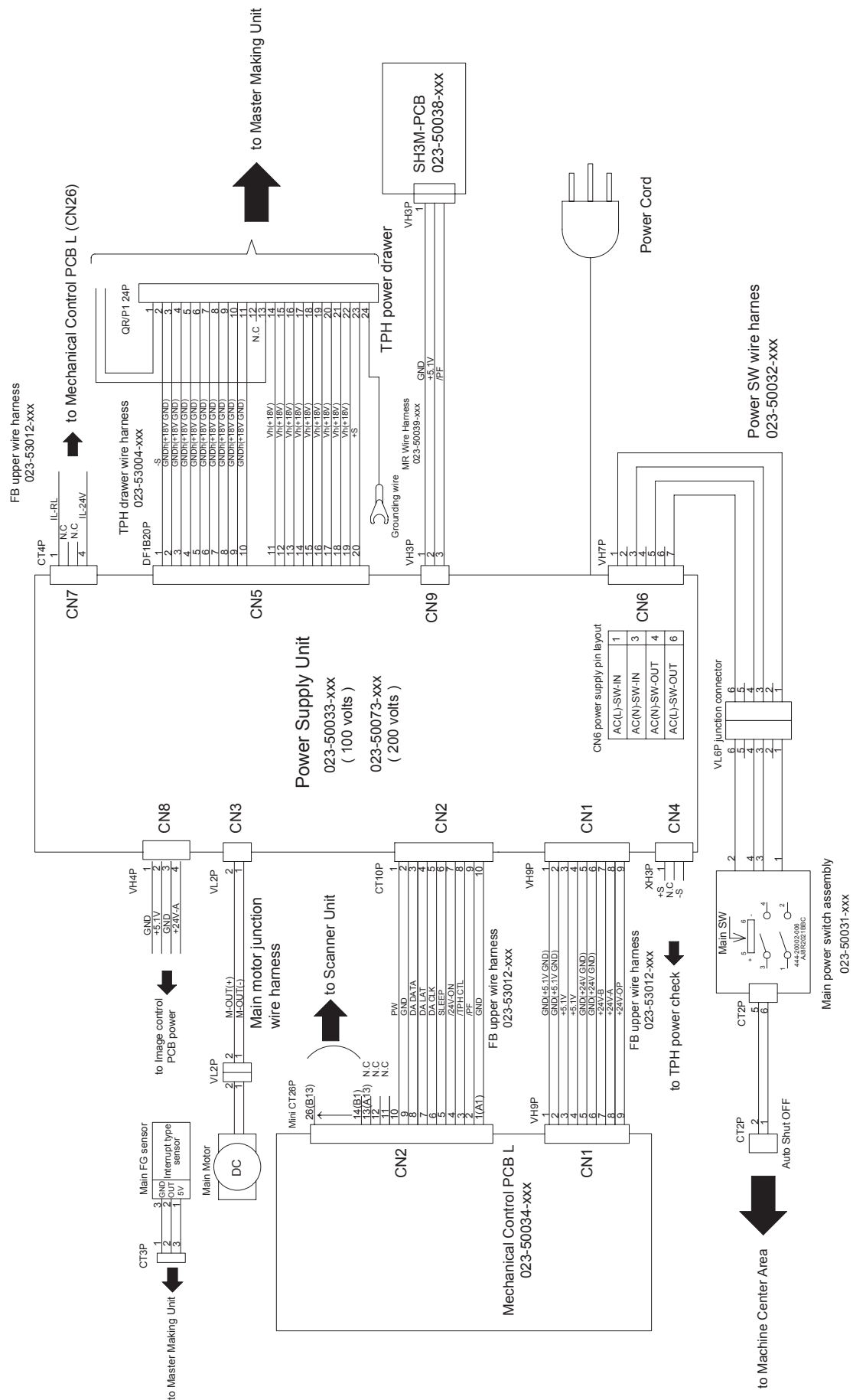
Contents

- 1. Connection between PCBs 19-2
- 2. Power supply 19-3
- 3. Master making area 19-4
- 4. Paper feed area 19-5
- 5. Scanning area 19-6
- 6. Paper receiving area 19-7
- 7. Main components area 19-8
- 8. Master removal area 19-9
- 9. Operation panel area 19-10
- 10. Print drum area 19-11
- 11. Optional components 19-12
- 12. Fuses 19-13

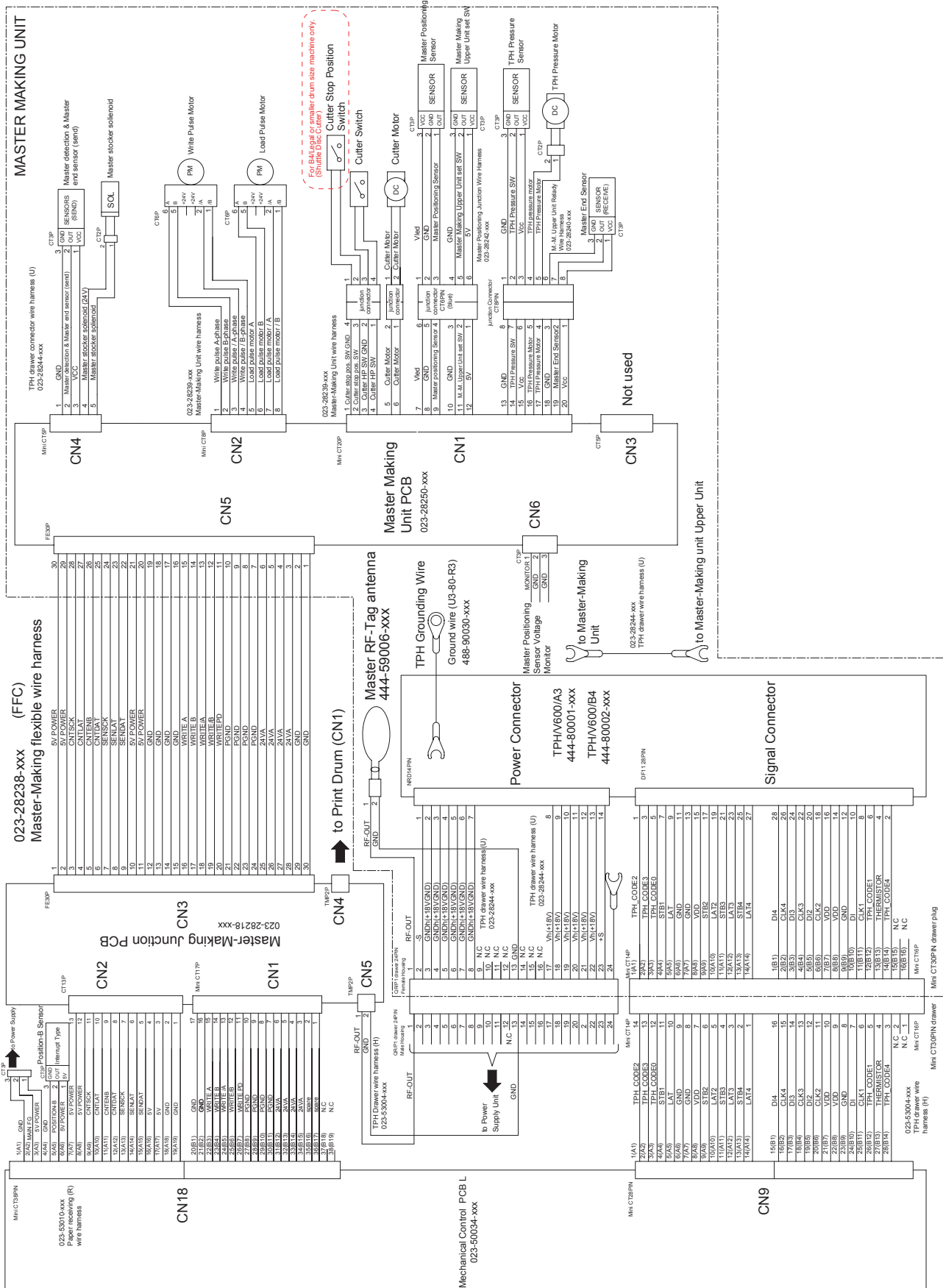
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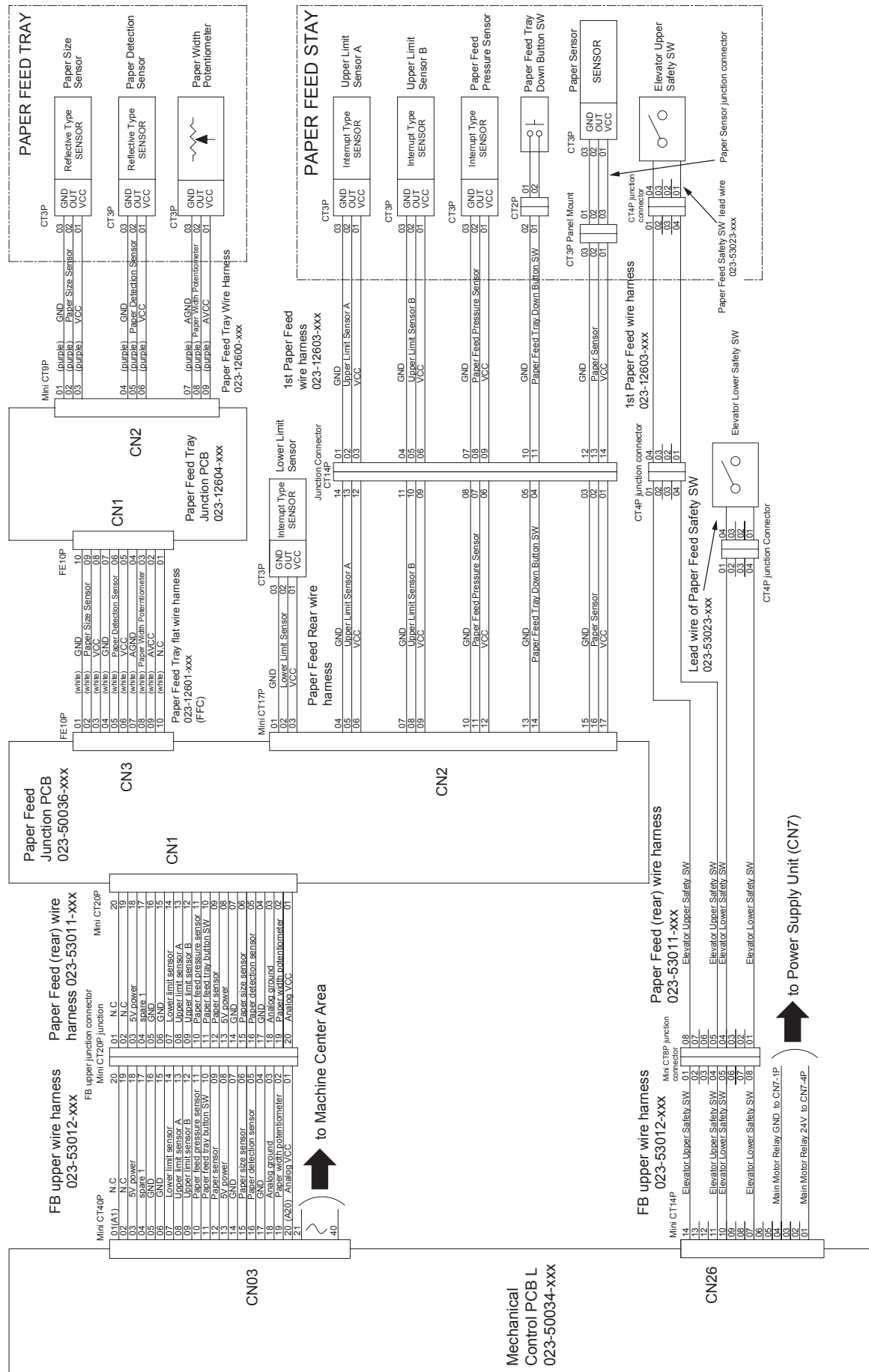
2. Power supply



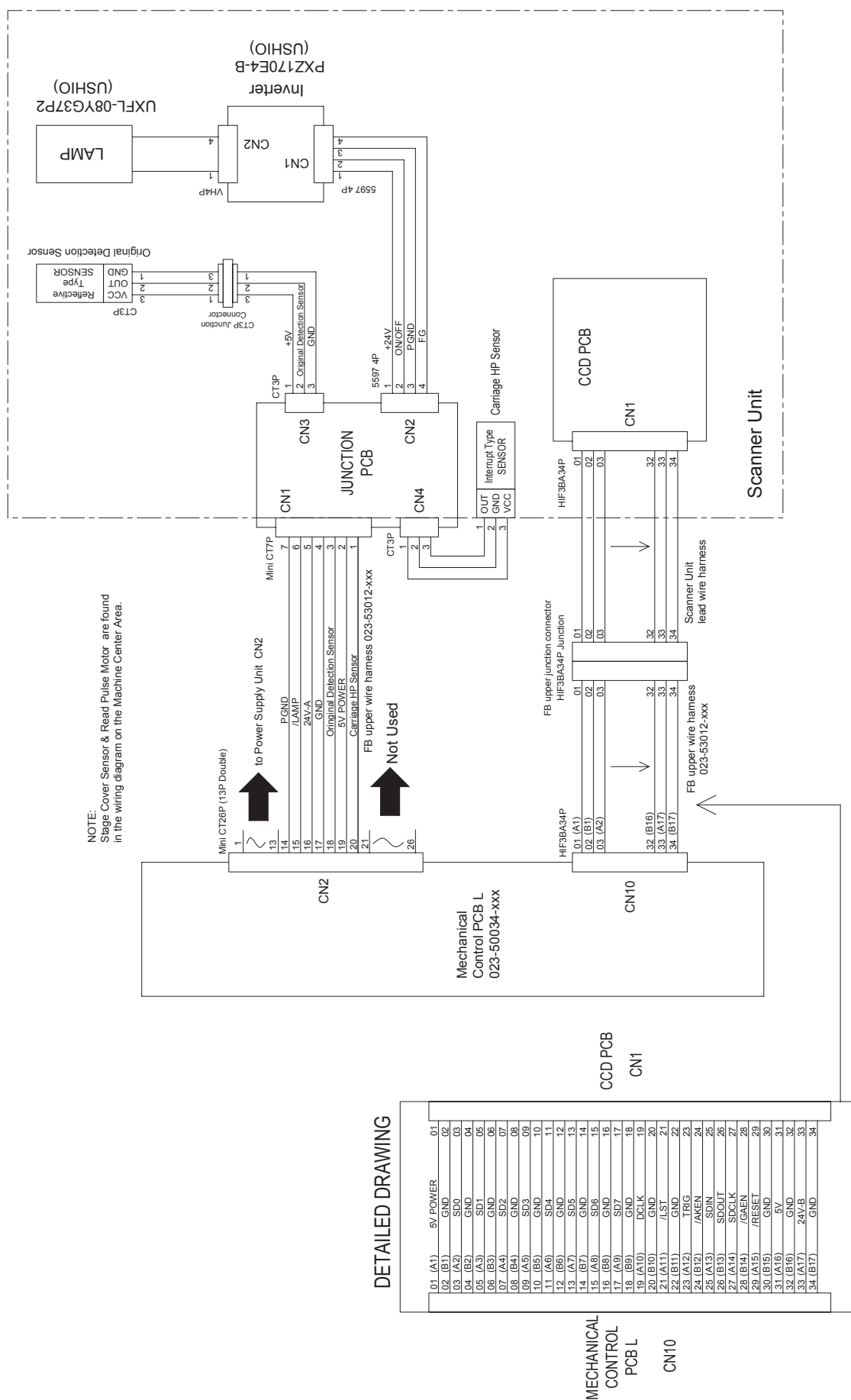
3. Master making area



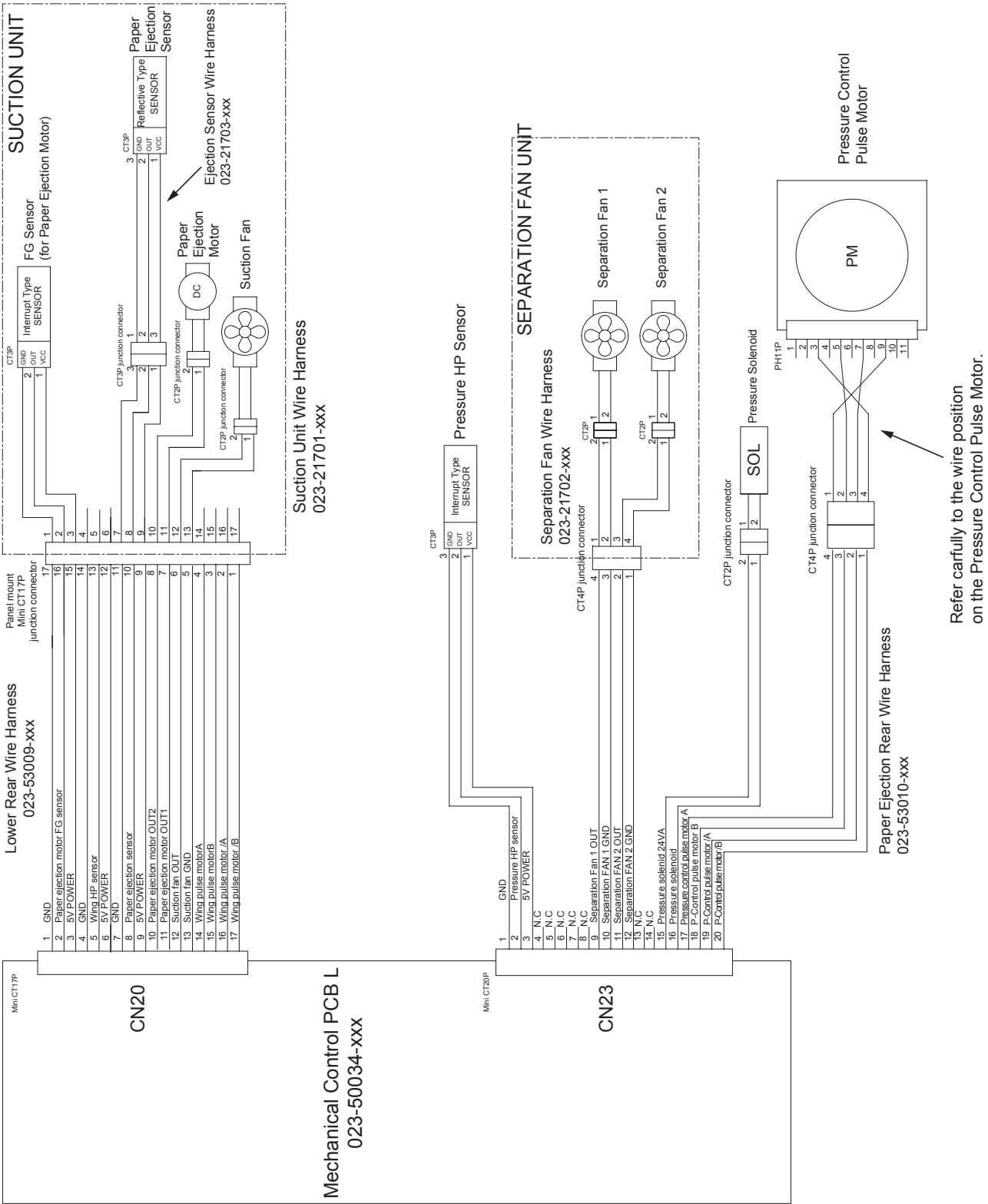
4. Paper feed area



5. Scanning area

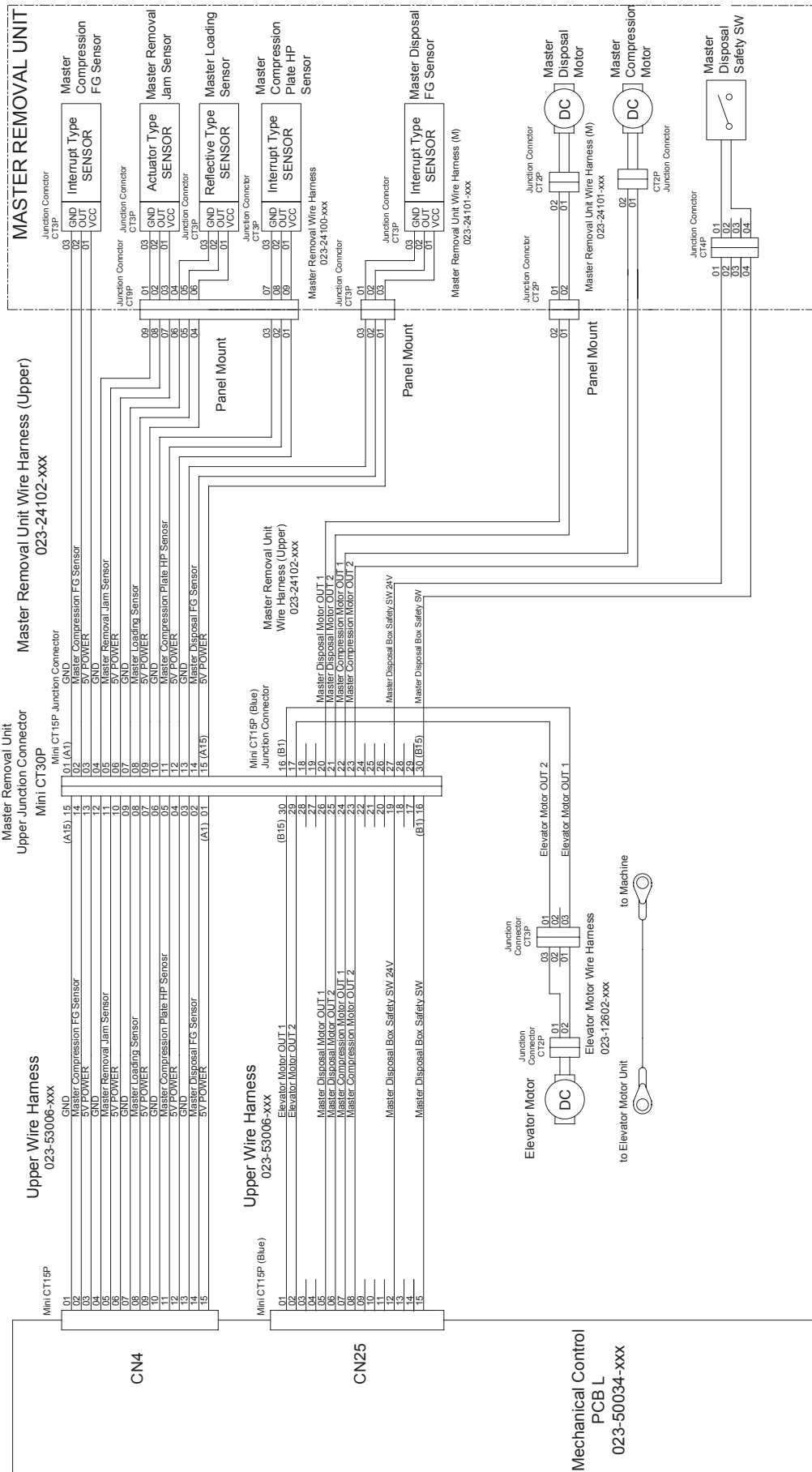


6. Paper receiving area

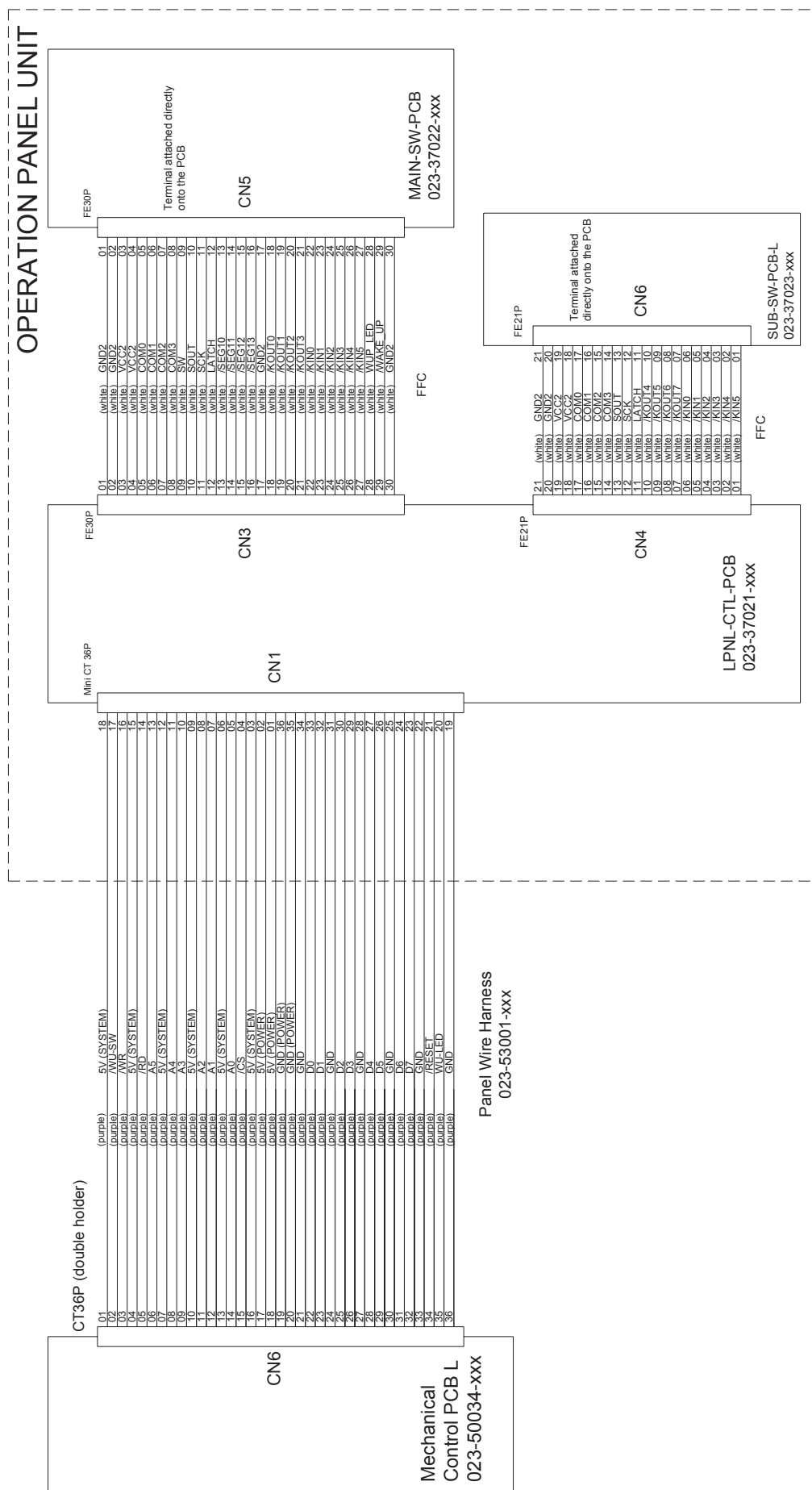




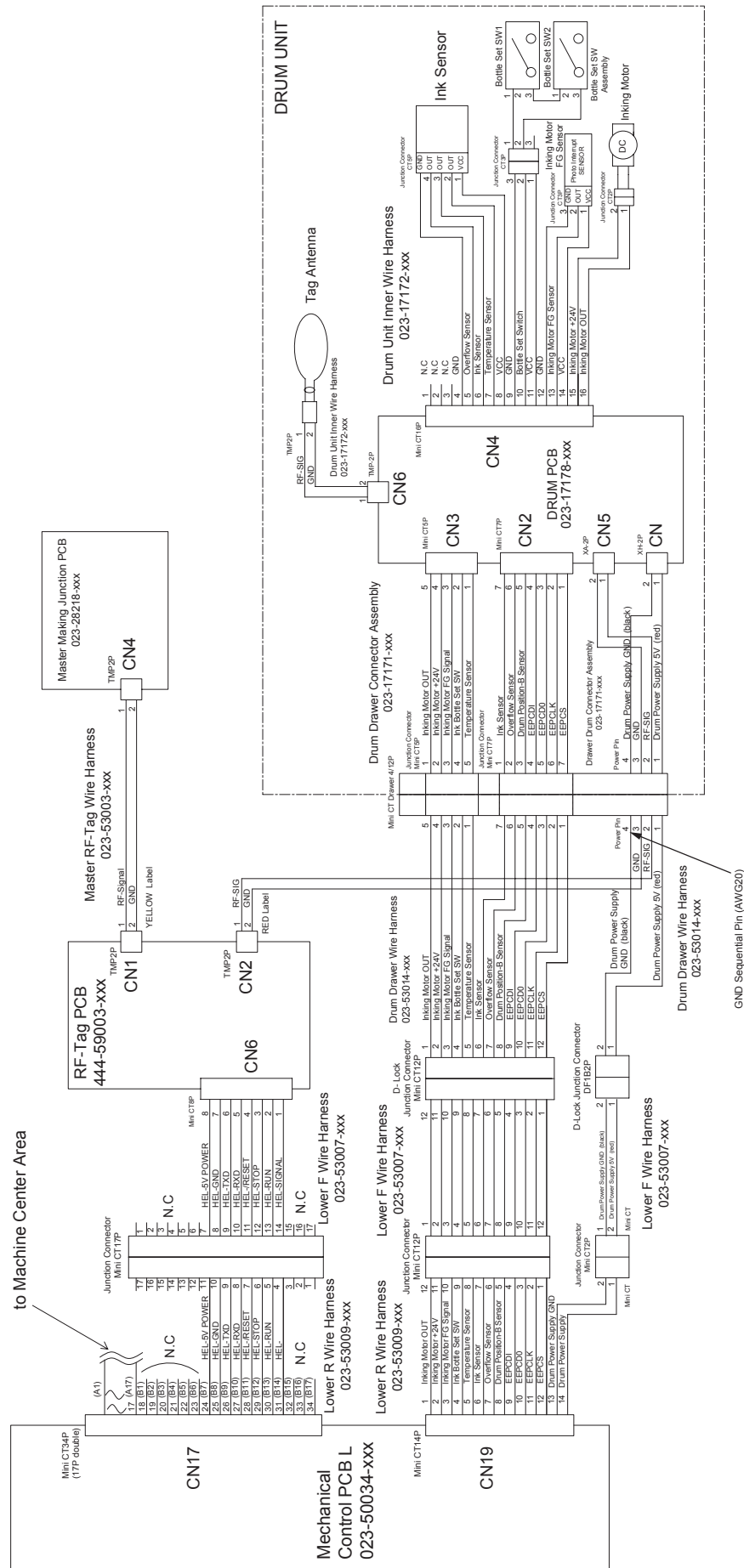
8. Master removal area



9. Operation panel area



10. Print drum area



12. Fuses

Fuse No.	Circuit	Faulty Fuse	Related Components
F001 (100V machine) 125V 10A (200V machine) 250V 6.3A	Main primary	Power not provided	Power to the main unit
F101 250V 3.15A	24V-A	T98-947 24V-A is not provided	Elevator motor Thermal pressure motor Cutter motor Read pulse motor Print registration pulse motor Load pulse motor Write pulse motor Suction fan Master stocker solenoid Pressure solenoid Print drum lock solenoid Paper feed clutch
F102 25V 6.3A	24V-B	T98-948 24V-B is not provided	Master compression motor Clamp motor Paper ejection motor Master removal motor Inking motor Pressure control pulse motor Separation fan Master-making unit lock solenoid Copy counter Master counter
F103 250V 3.15A	24V-OP (option)		-----

"RZ2" SERIES

PARTS LIST

(VERSION: 2.0)

October, 2004

RISO KAGAKU CORPORATION

MACHINE MODELS

Refer to the chart below for the "Remark" column in this parts list.

The "REF" alphabets in the chart below is marked in the "Remark" column within the parts list where applicable.

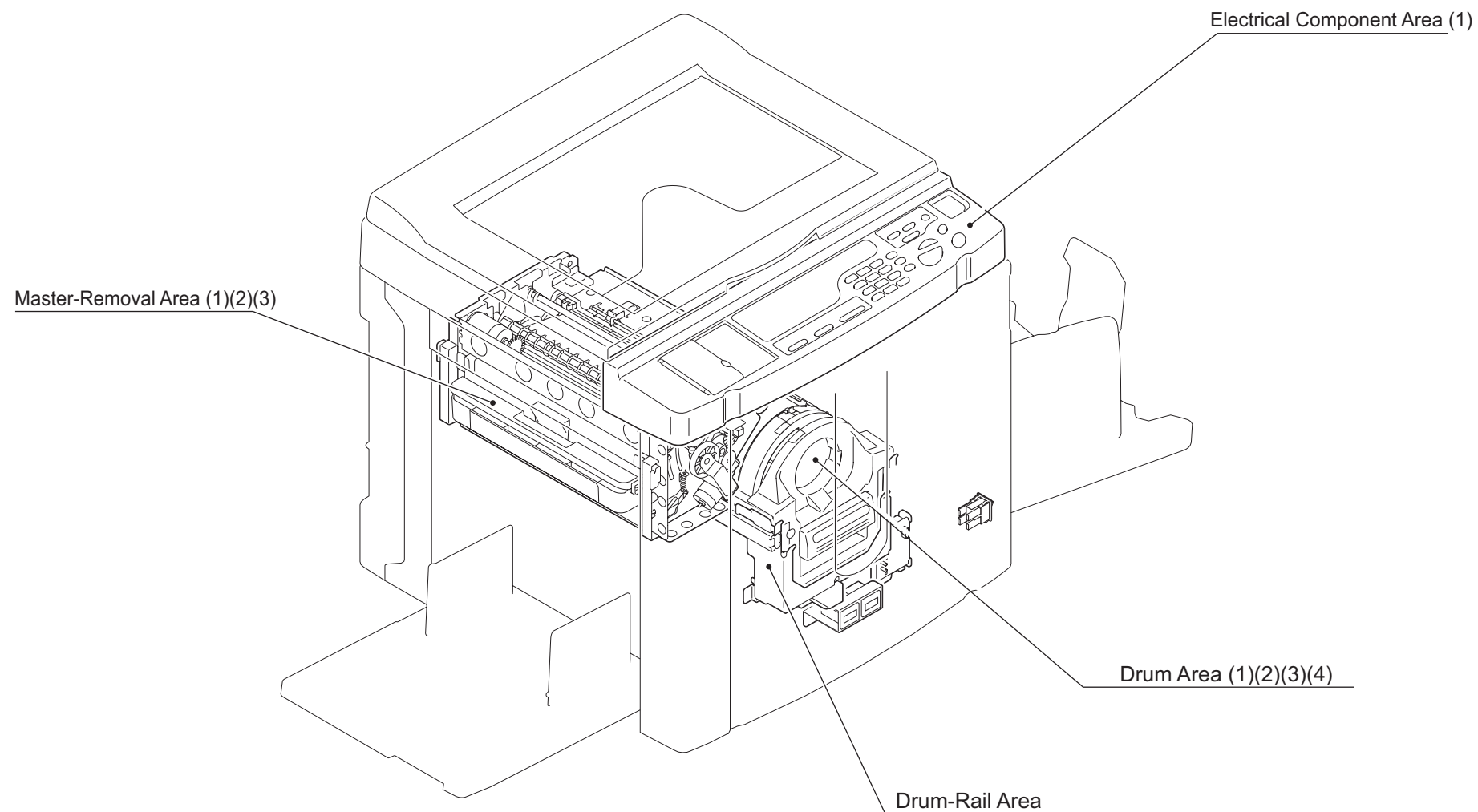
Area & Voltage	Model Name	Dpi	REF
America 100 volts	RZ220	300	UI
America 200 volts	RZ230	300	UP
Europe 200 volts	RZ230	300	EP
	RZ200	300	EP
Asia 100 volts	RZ230	300	AN
Asia 200 volts	RZ230	300	AW
	RZ200	300	AW
	RZ220	300	AS
China200 volts	RZ230	300	C/CN



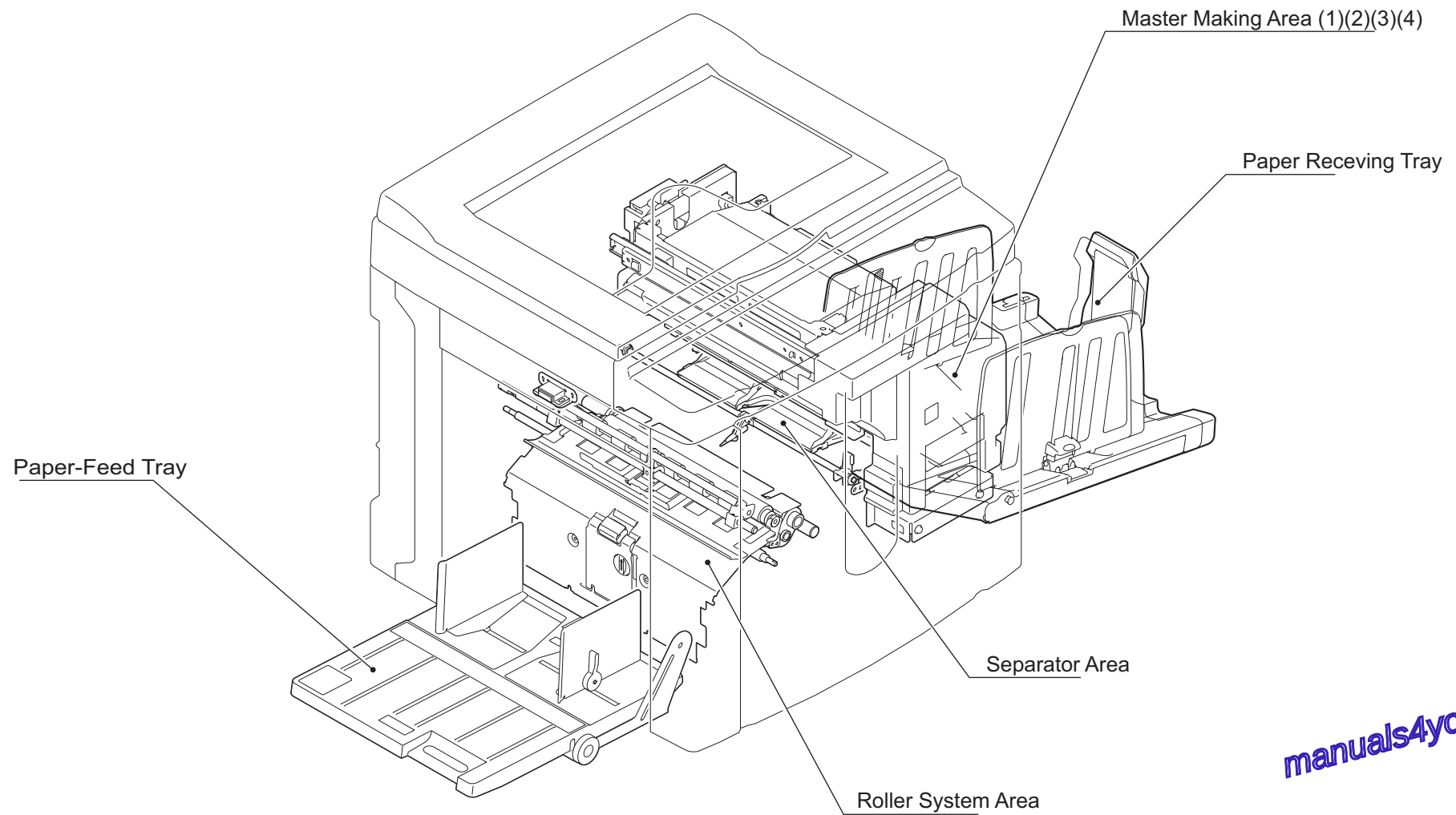
Painting cell : It has been revised from Version Apr, 2004.

I. PARTS LIST

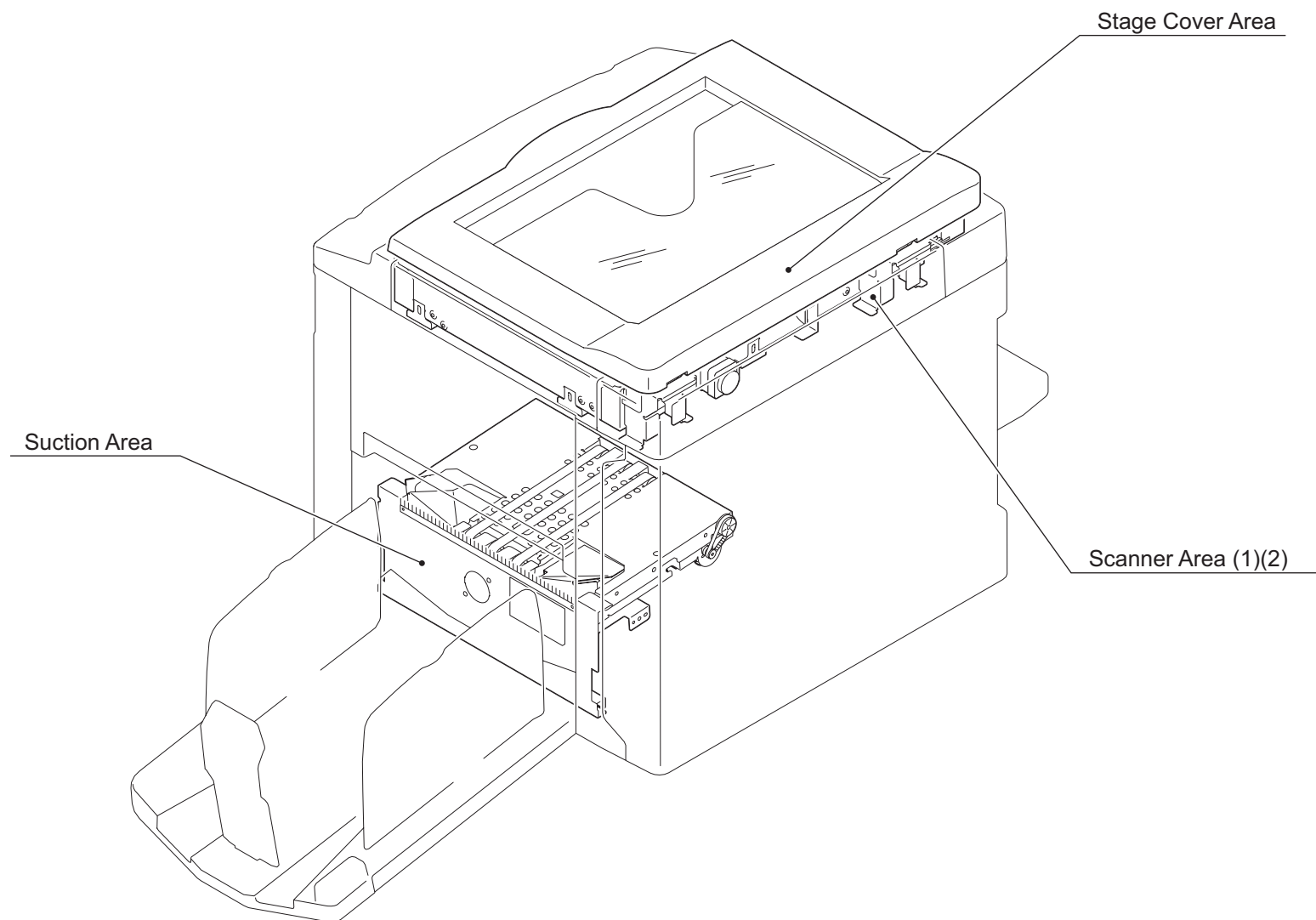
	<u>Page No.</u>
Fig.1 Main Body Area	2
Fig.2 Scraper Area	4
Fig.3 Elevator - Safety SW Area	6
Fig.4 Paper - Feed Tray	8
Fig.5 Drive Mechanism Area (1)	10
Fig.6 Drive Mechanism Area (2)	12
Fig.7 Drive Mechanism Area (3)	14
Fig.8 Roller System Area	16
Fig.9 Drum Area (1)	18
Fig.10 Drum Area (2)	20
Fig.11 Drum Area (3)	22
Fig.12 Drum Area (4)	24
Fig.13 Drum - Rail Area	26
Fig.14 Clamp Area	28
Fig.15 Separator Area	30
Fig.16 Suction Area	32
Fig.17 Paper Receiving Tray Area	34
Fig.18 Scanner Area (1)	36
Fig.19 Scanner Area (2)	38
Fig.20 Master-Making Area (1)	40
Fig.21 Master-Making Area (2)	42,43
Fig.22 Master-Making Area (3)	45,46
Fig.23 Master-Making Area (4)	48
Fig.24 Master-Removal Area (1)	50
Fig.25 Master-Removal Area (2)	52
Fig.26 Master-Removal Area (3)	54
Fig.27 Electrical Component Area (1)	56
Fig.28 Electrical Component Area (2)	58
Fig.29 Electrical Component Area (3)	60
Fig.30 Electrical Component Area (4)	62
Fig.31 Stage Cover Area	64
Fig.32 Exterior Cover Area	66



Component 2



Component 3



Component 4

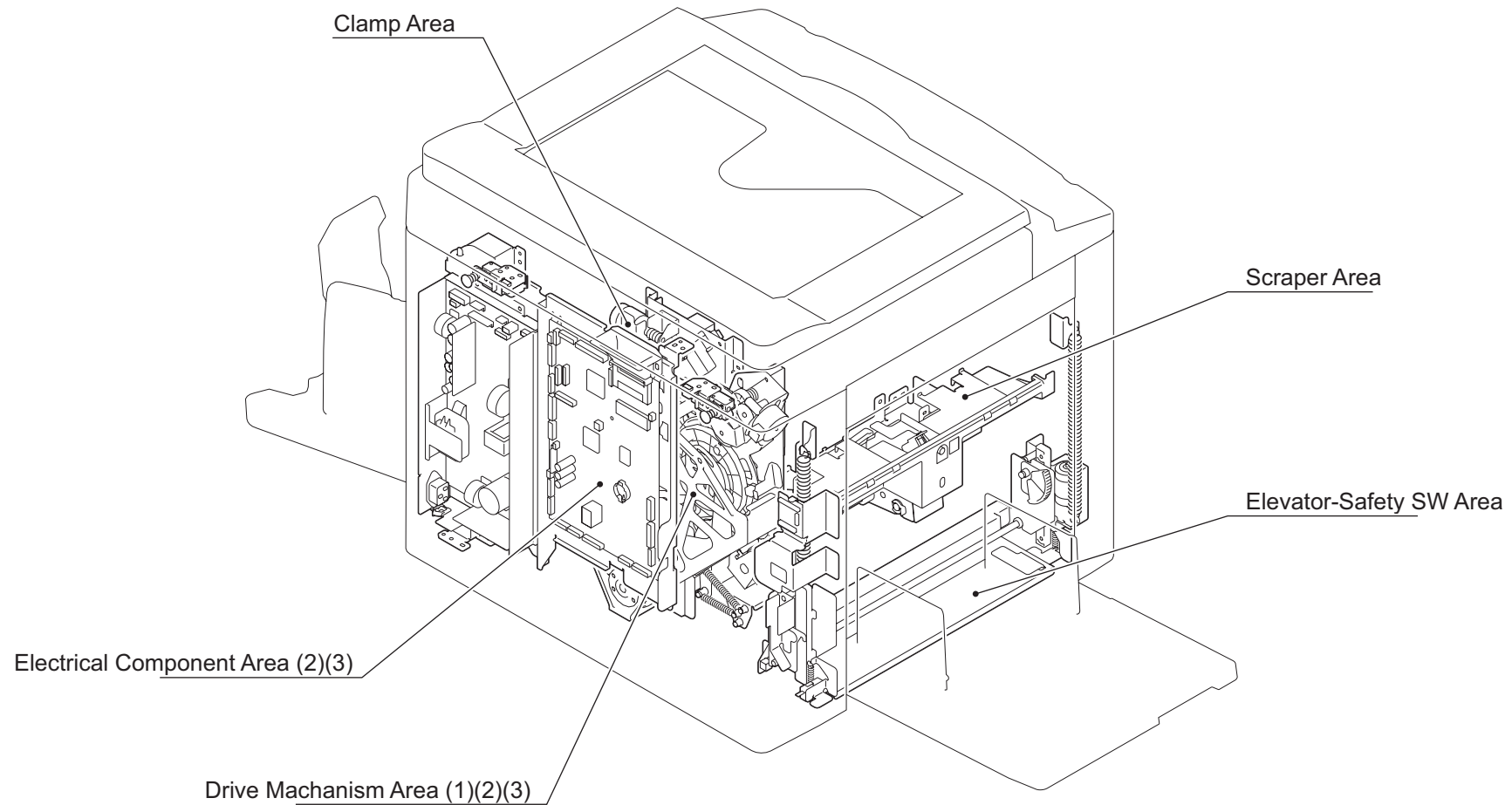
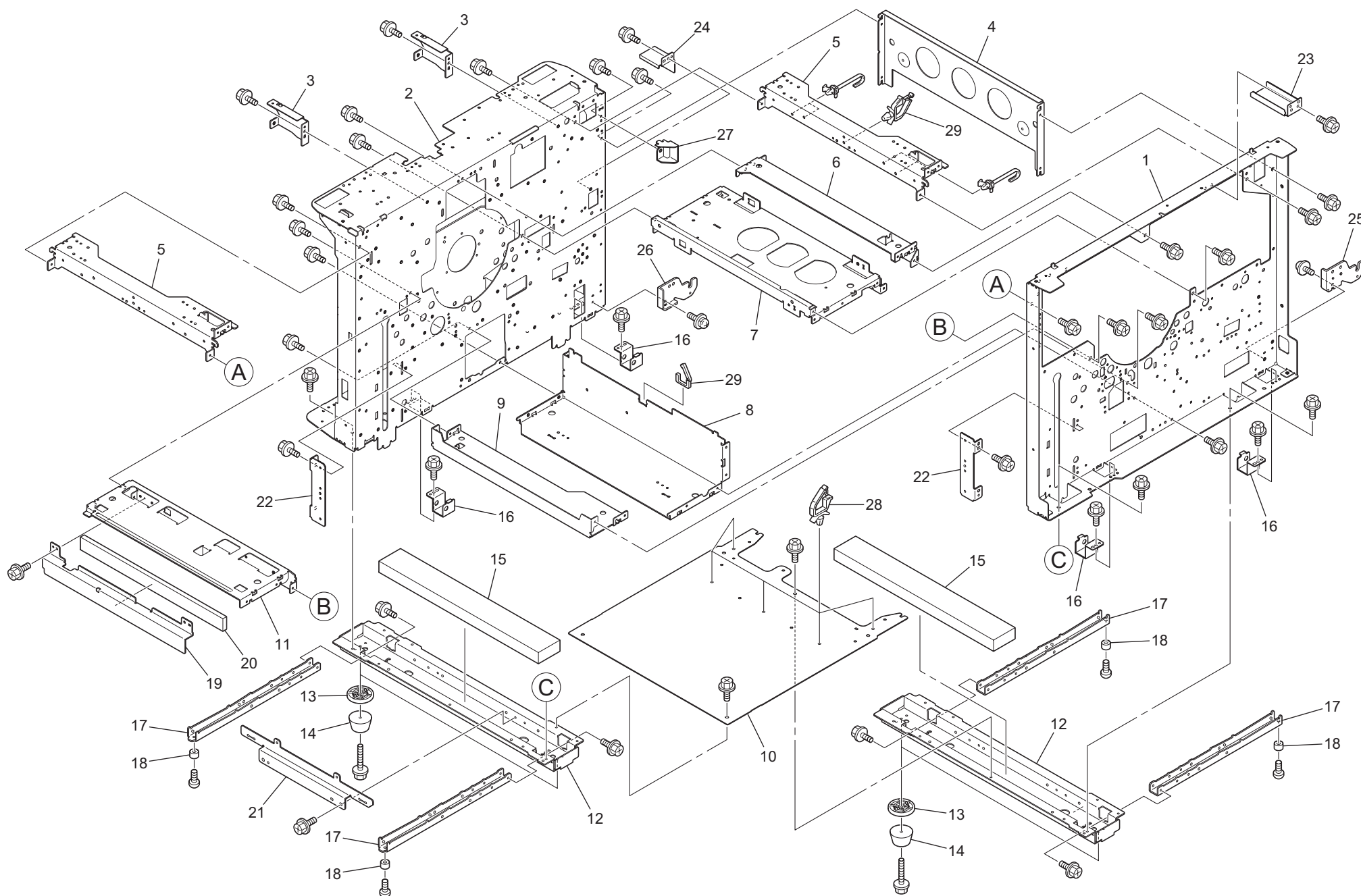


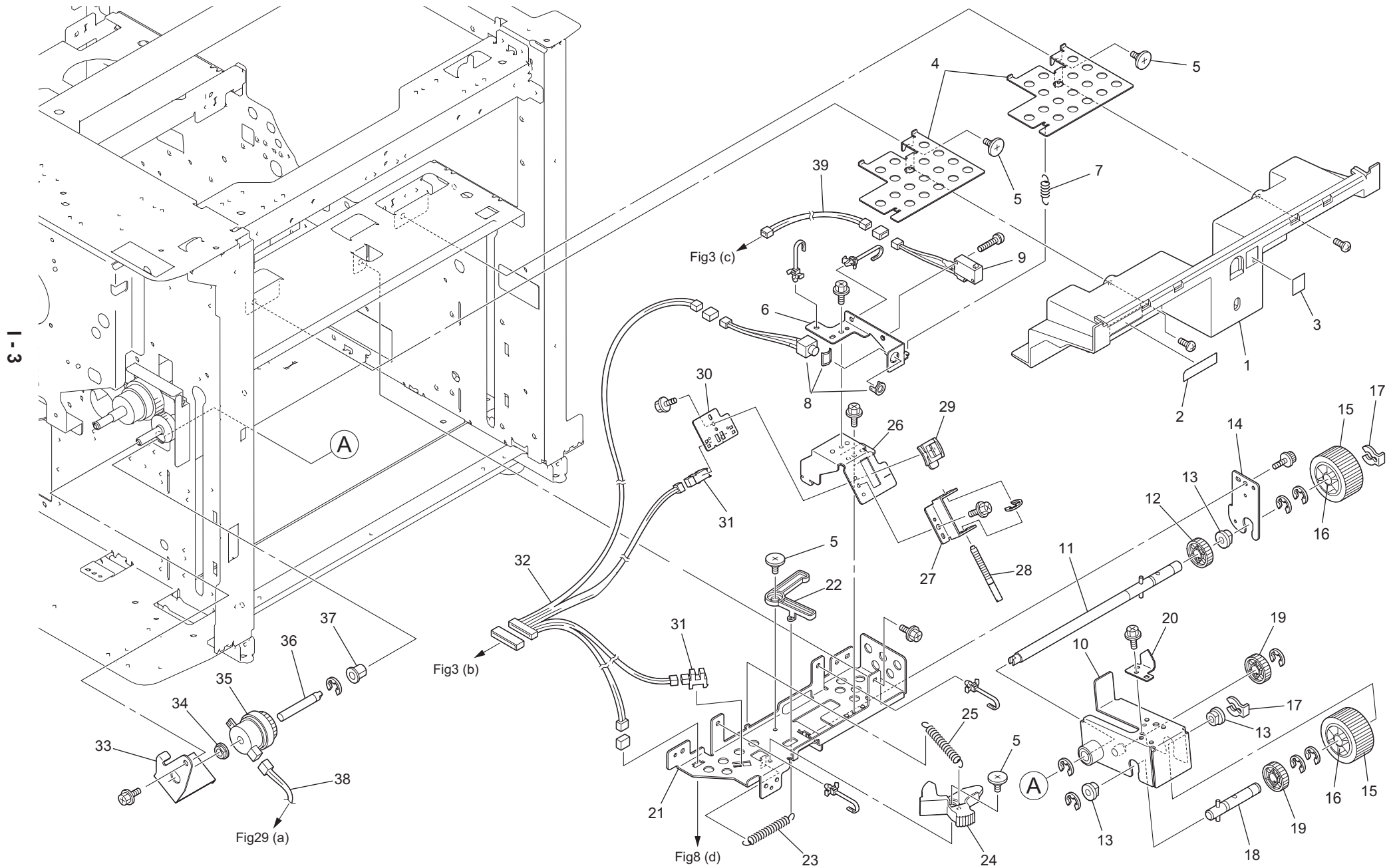
Fig1. Main Body Area



1-2

[illegible]

Fig2. Scraper Area

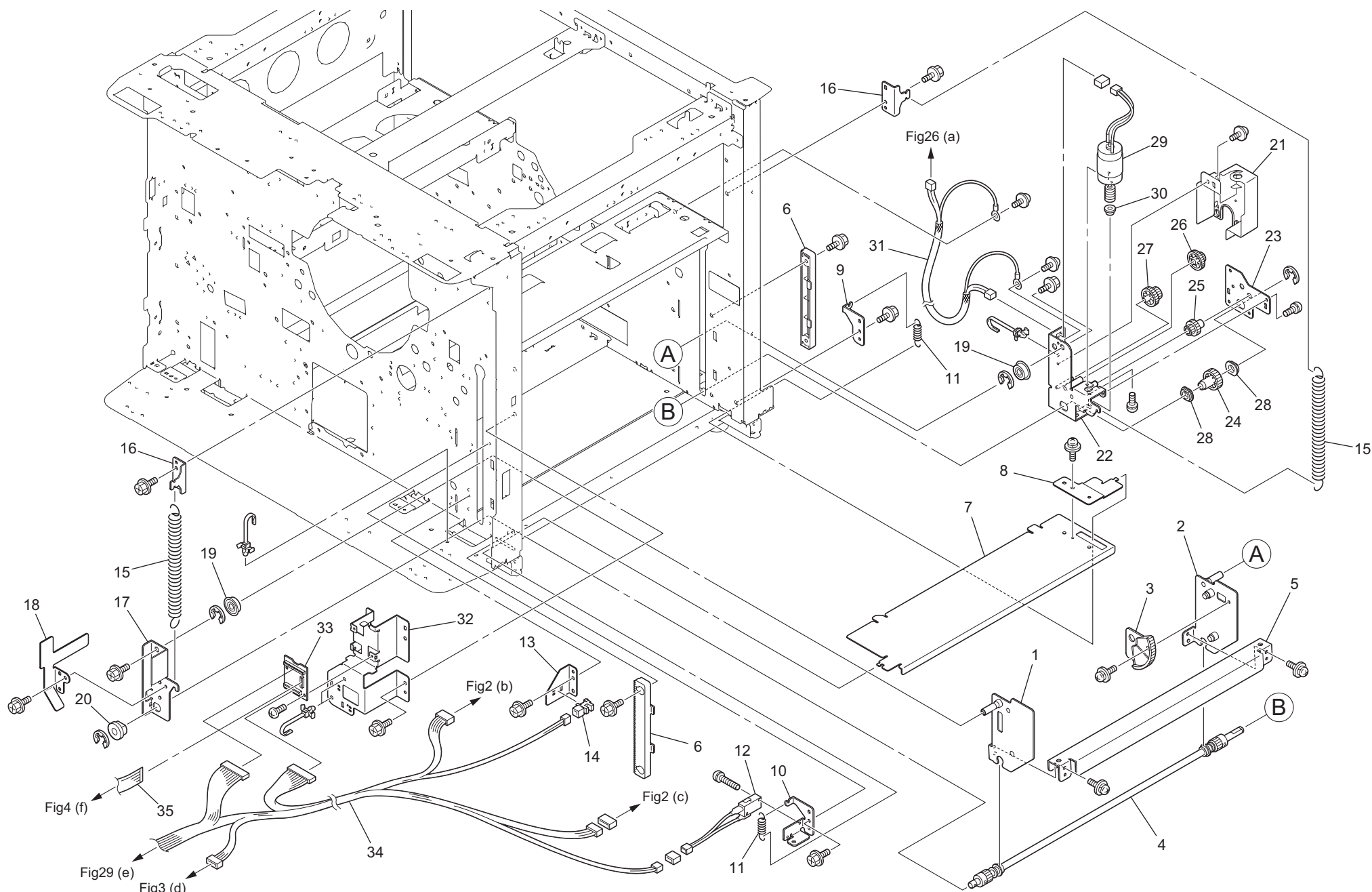


No.	Part No.	Part Name	Q'ty	Remark
1	023-12316-008	Cover; P-Feed	1	
2	550-21173-001	Seal: P.-Feed Pressure; Pic.	1	
3	550-20059-108	Seal;P.-F.-T.Down	1	
4	023-12319-007	Upper Guard	2	
5	635-17824-005	Stepped Screw;F8X2.3;M4X4.4	4	
6	023-12315-001	E Swtch Plate	1	
7	023-12344-001	Spring; Elevator Safety SW; Upper	1	
8	021-51030-001	Elevator SW Ass'Y	1	
9	023-53023-007	Elevator Safety SW	1	
10	023-12333-204	Frame Bracket; Pick-Up	1	
11	023-12329-002	Shaft; Pick-Up Roller	1	
12	612-10021-107	Gear;M0.8X33X7.4	1	
13	607-16001-000	Metal;F10X15/14X6;18X2	3	
14	023-12328-103	Support; Pick-Up Roller Shaft	1	
	023-12305-006	Pick-Up Roller; RZ(15-16)	2	
15	035-14303-001	*Rubber ; Pick-Up Roller	2	
16	023-12306-002	*Core:Pick-up Roller	2	
17	019-11812-106	Lock Ring	2	
18	023-12330-000	Scraper Shaft; Pickup	1	
19	612-11300-107	Gear;M0.8X34X8.5	2	
20	023-12334-006	Actuator; Upper limit; Std; P.-F.-T	1	
21	023-12310-000	Stay; Paper Feed	1	
22	020-11813-006	Arm;P.-F.Pressure Adj.	1	
23	020-11811-100	Spring B;P.-F.Pressure Adj.	1	
24	023-12312-100	P.-F.Pressure Adj.Lever	1	
25	023-12313-009	Spring; Pf Pressure Adj. Lever	1	
26	023-12314-005	Bracket A; Upper limit Sensor	1	
27	030-14342-108	Support Plate B; Upper limit	1	
28	030-14346-006	Upper limit Adj. Screw	1	
29	030-14347-002	Base; Upper limit Adj. Screw	1	
30	023-12325-007	Bracket;Upper limit Sensor	1	
31	444-30000-001	Sensor;GP1A73A	2	
32	023-12607-002	Wire Harness; 1St Paper Feed LL	1	
33	023-15083-004	Bracket; Clutch; Pick-Up Roller	1	

[illegible]

Fig3. Elevator-Safety SW Area

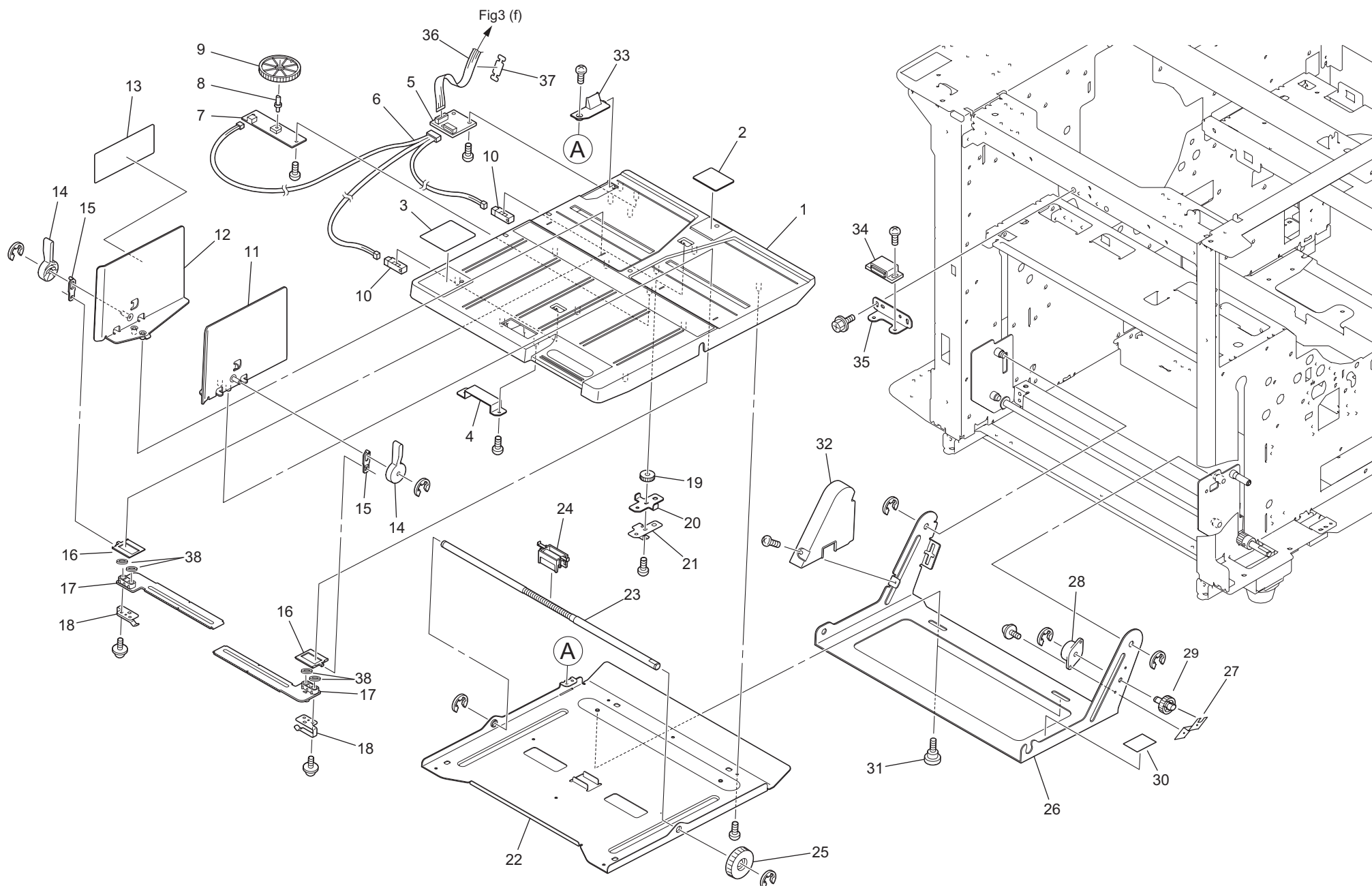
1-5



[illegible]

Fig4. Paper-Feed Tray

1-7

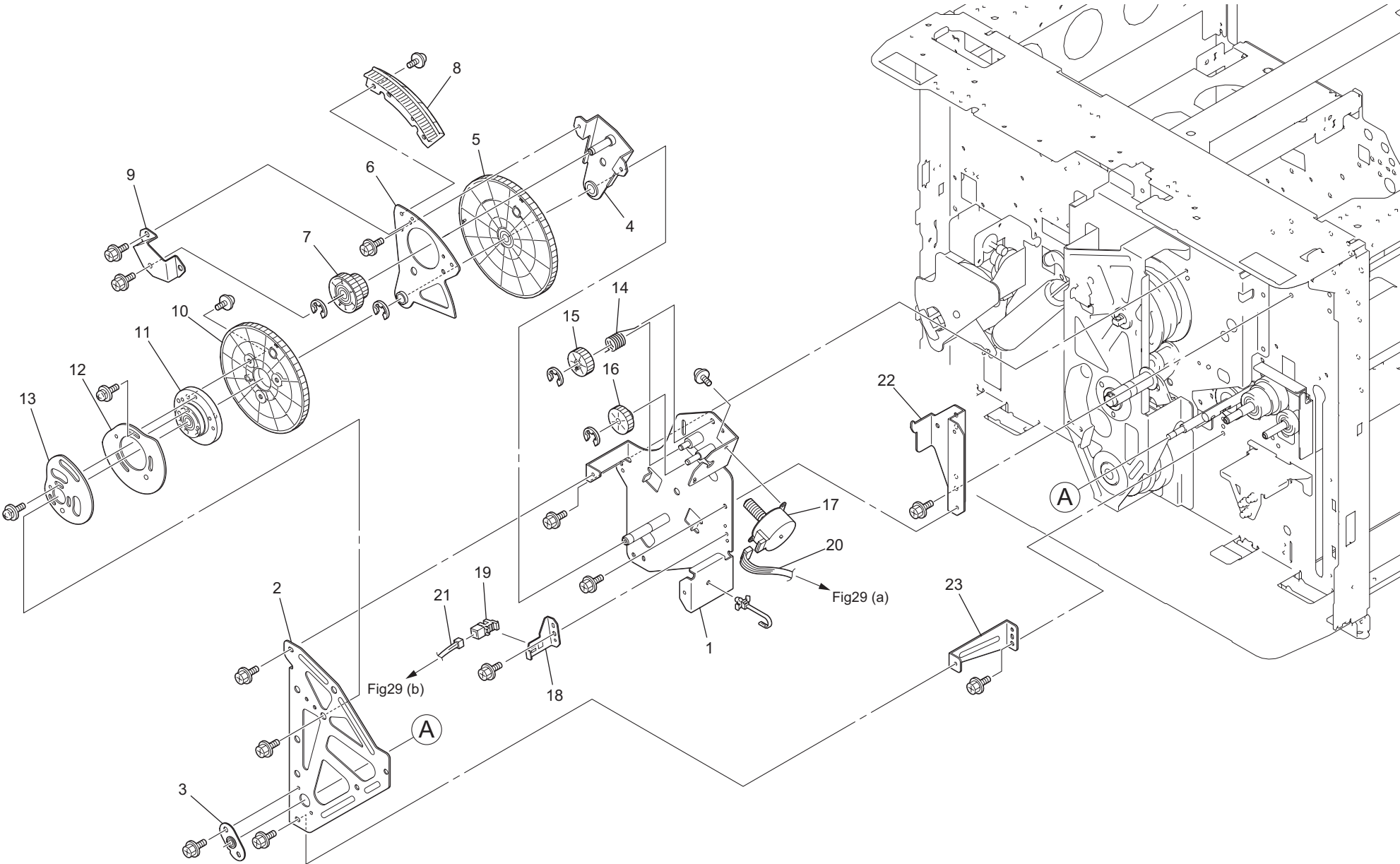


No.	Part No.	Part Name	Q'ty	Remark
	023-75082-058	P.-F.-T.Unit SU(1-33)	1	
1	023-12101-206	*Papar Feed Tray; Upper	1	
2	020-11520-009	*L.O. Sheet	1	
3	023-12150-002	*Seal; Closing Tray Instruction; P.-F.-T	1	
4	023-12126-004	*Bracket; Catch	1	
5	023-12604-100	*Junction PCB; P.-F. Tray	1	
6	023-12600-008	*Wire Harness; P.-F. Tray Inner	1	
7	023-12605-000	*Potentiometer; P.-F.-T	1	
8	023-12241-105	*Shaft; Potentiometer Gear	1	
9	612-10023-002	*Gear;M1X50X6	1	
10	444-33005-004	*Sensor; PS-117ND1	2	
11	023-12139-106	*Side Guide F; P.-F.-T	1	
12	023-12140-104	*Side Guide R; P.-F.-T	1	
13	023-12147-001	*Seal; Setting Instruction; P.-F.-T	1	
14	023-12108-006	*Lever; P.-F.-T.	2	
15	023-12109-002	*Link Plate A; P.-F.-T.	2	
16	023-12128-007	*Link Plate B;P.-F.-T.	2	
17	023-12127-000	*Slide Rack; P.-F.-T.	2	
18	023-12145-009	*Ground Plate; Side Guide; P.-F.-T	1	
19	011-11514-000	*Gear;Slide Rack;P.-F.-T.	1	
20	023-12129-003	*Guide Plate; Slide Rack	1	
21	023-12105-007	*Grounding Metal; P.-F.-T.	1	
22	023-12102-008	*Bottom Frame; P.-F.-T.	1	
23	023-12132-004	*Shaft; P.-F. Tray	1	
24	023-12123-102	*Adj. NUT; P.-F.-T.	1	
25	023-12133-000	*Adjuster Dial; P.-F.-T.	1	
26	023-12121-100	*Bracket ; P.-F.-T.	1	
27	023-12155-209	*Bracket ; Hinge Cover	1	
28	610-10009-005	*One-Way Hinge; OWNF6-1NRS	1	
29	023-75151-050	*Hinge ; Gear Assy	1	
30	021-04011-104	*Adj. Seal; P.-F.-T	1	
31	635-17613-004	*Stepped Screw;6X1.8;M3X4	2	
32	023-12130-001	*Flexible Wire Cover; P.-F.-T.	1	
33	023-12125-008	*Connector Cover	1	

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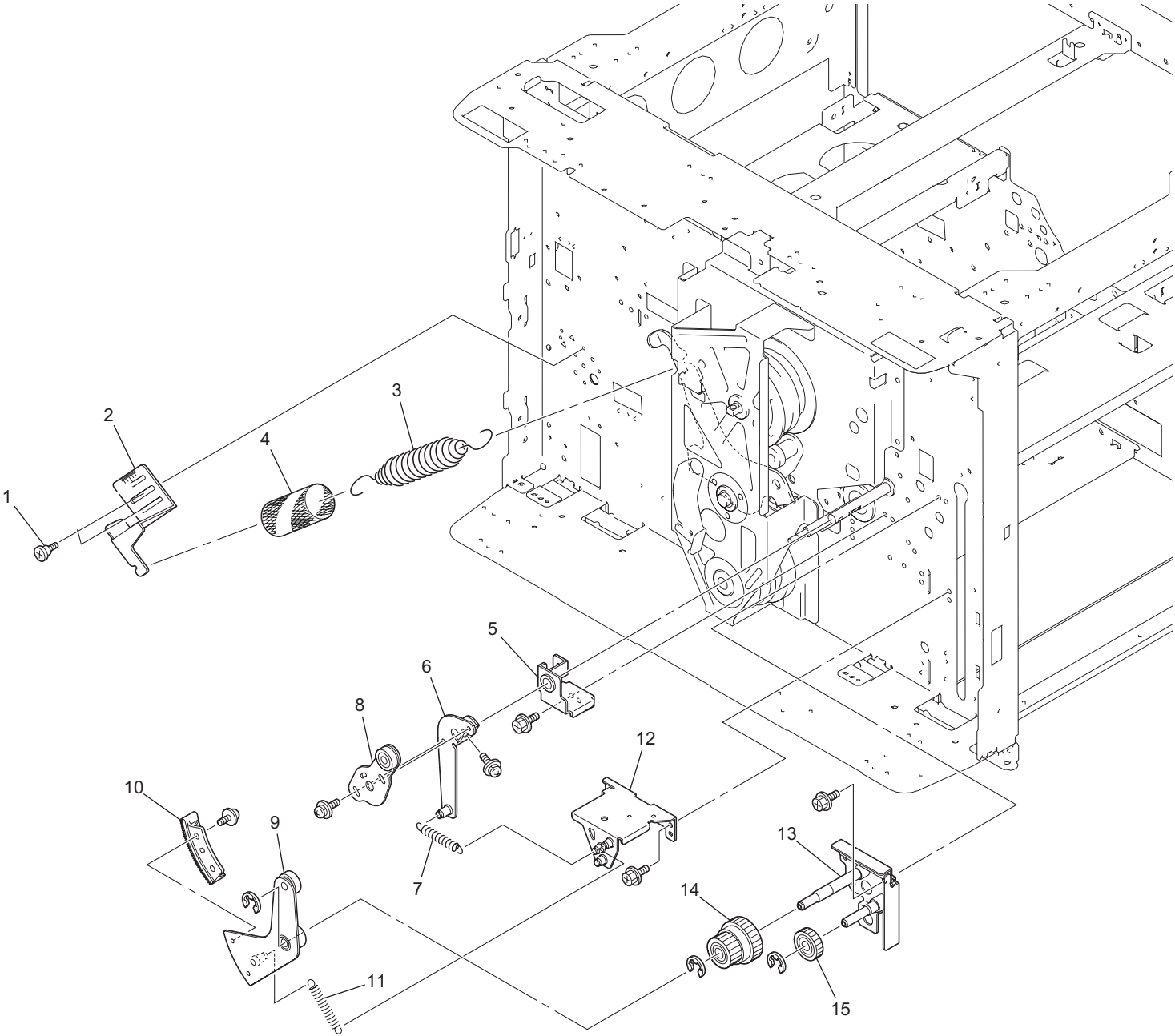
Fig5. Drive Mechanism Area (1)

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Fig6. Drive Mechanism Area (2)



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Fig6 Drive Mechanism Area(2)

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Fig7. Drive Mechanism Area (3)

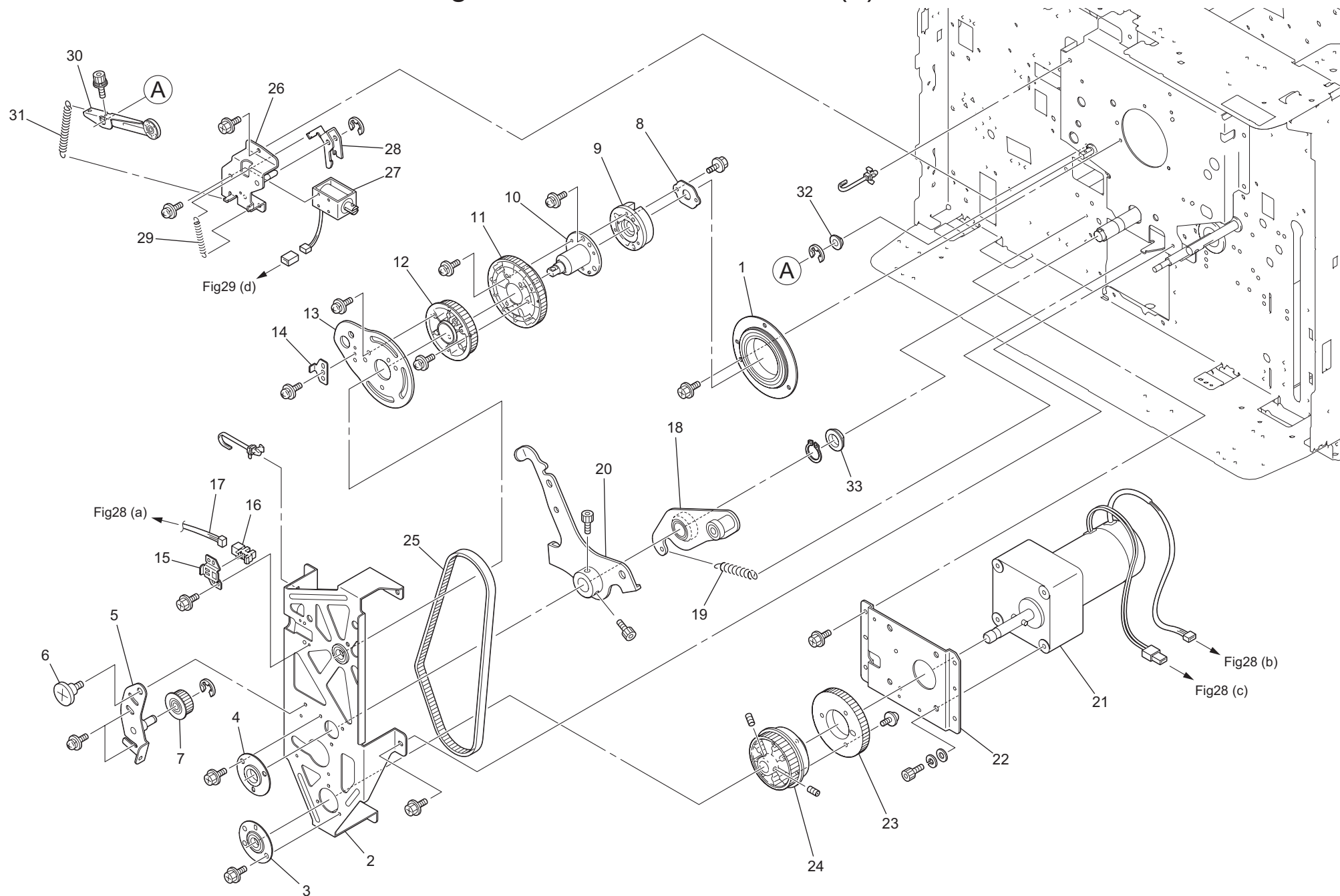
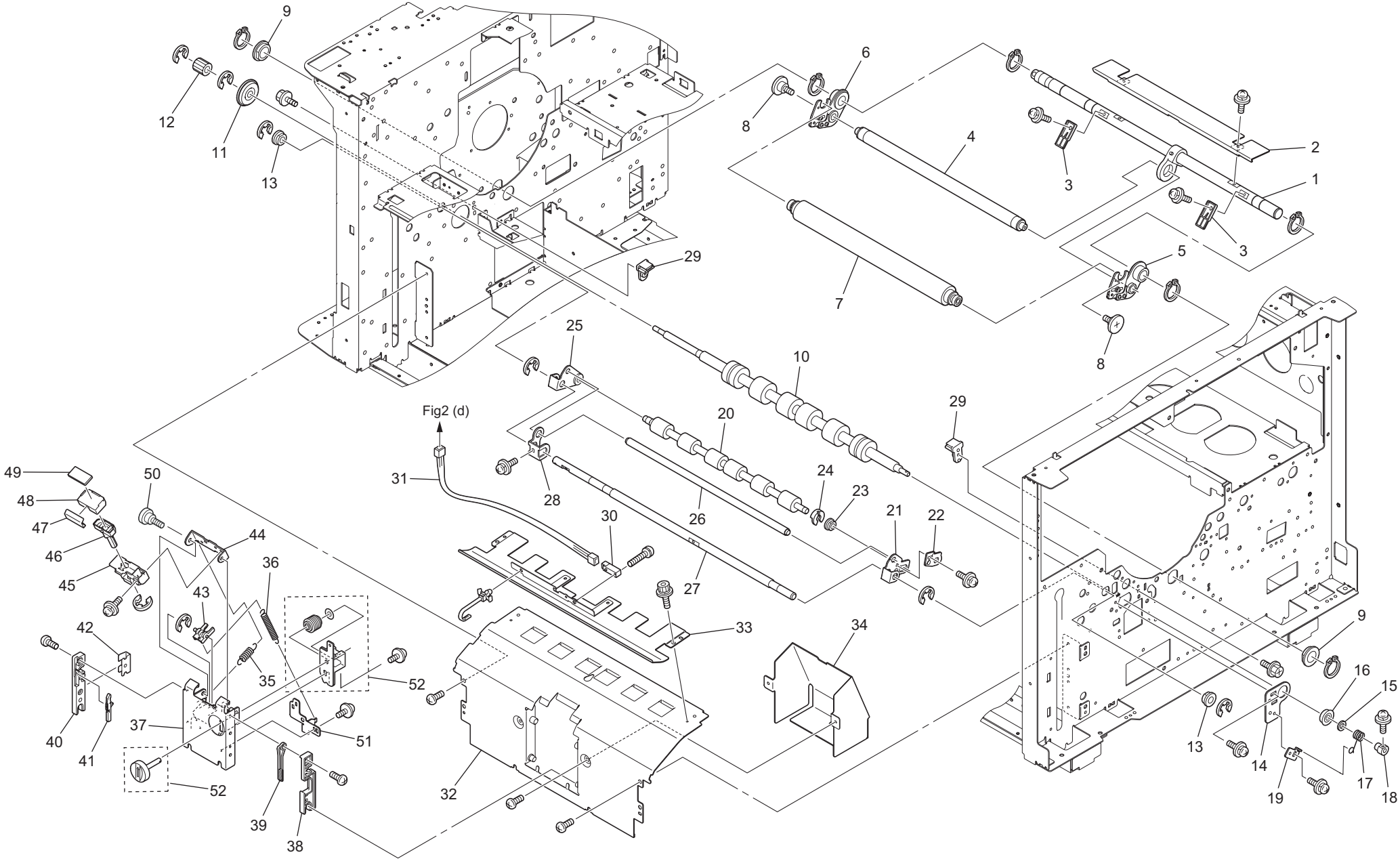


Fig7 Drive Mechanism Area(3)

No.	Part No.	Part Name	Q'ty	Remark
1	023-15001-008	Bearing; Main Shaft	1	
2	023-15108-201	Main Cover; Drive	1	
3	030-12235-100	Support Plate; Main Motor	1	
4	023-15012-000	Bracket; Pressure Shaft	1	
5	023-15006-107	Tensioner Lever; Main Belt	1	
6	635-17814-000	Stepped Screw; 8X1.7;M4X4.3	1	
7	611-90006-009	Pulley; P18-5GT-12	1	
	023-75125-059	Main Gear Assy B4(8-14)	1	RZ-23x,RZ22x
	023-75126-055	Main Gear Assy A4(8-14)	1	RZ-20x
8	023-15089-002	*Joint Collar; Drive	1	
9	023-15003-000	*Shaft Joint; Drive	1	
10	023-15002-004	*Main Shaft; Drive	1	
11	023-15121-003	*Main Gear; Drive	1	
12	611-90007-005	*Pulley; P42-5Gt	1	
13	023-15129-004	*Pressure Cam; B4	1	RZ-23x,RZ22x
13	023-15128-008	*Pressure Cam; A4	1	RZ-20x
14	023-15046-001	*Actuator; B position sensor	1	
15	023-15150-003	Bracket; B Position Sensor	1	
16	444-30008-002	Sensor; LG-248N11	1	
17	023-53021-101	Wire Harness; Paper Ejection Rear LL	1	
18	023-15140-105	Pressure Lever Ass'Y; Cam	1	
19	023-15145-000	Spring; Cam Follower	1	
20	023-15136-108	Pressure Lever Ass'Y; Spring	1	
	023-75128-058	Main Motor Assy(21-24)	1	
21	490-22017-003	*CWTD3337G-24F-9K24E	1	
22	023-15047-105	*Bracket; Main Motor	1	
23	612-10017-002	*Gear;M1X80X10	1	
24	611-90008-001	*Pulley; P42-5GT-13	1	
25	620-00010-001	Belt; 645-5GT-10	1	
	023-75153-052	Pressure Solenoid Assy(26-29)	1	
26	023-15020-002	*Base Bracket; Pressure Solenoid	1	
27	490-50006-009	*Solenoid; Tds-10A-1056	1	
28	030-12114-000	*Lever; Pressure Solenoid	1	
29	023-15123-006	*Spring; Pressure Solenoid	1	

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Fig8. Roller System Area

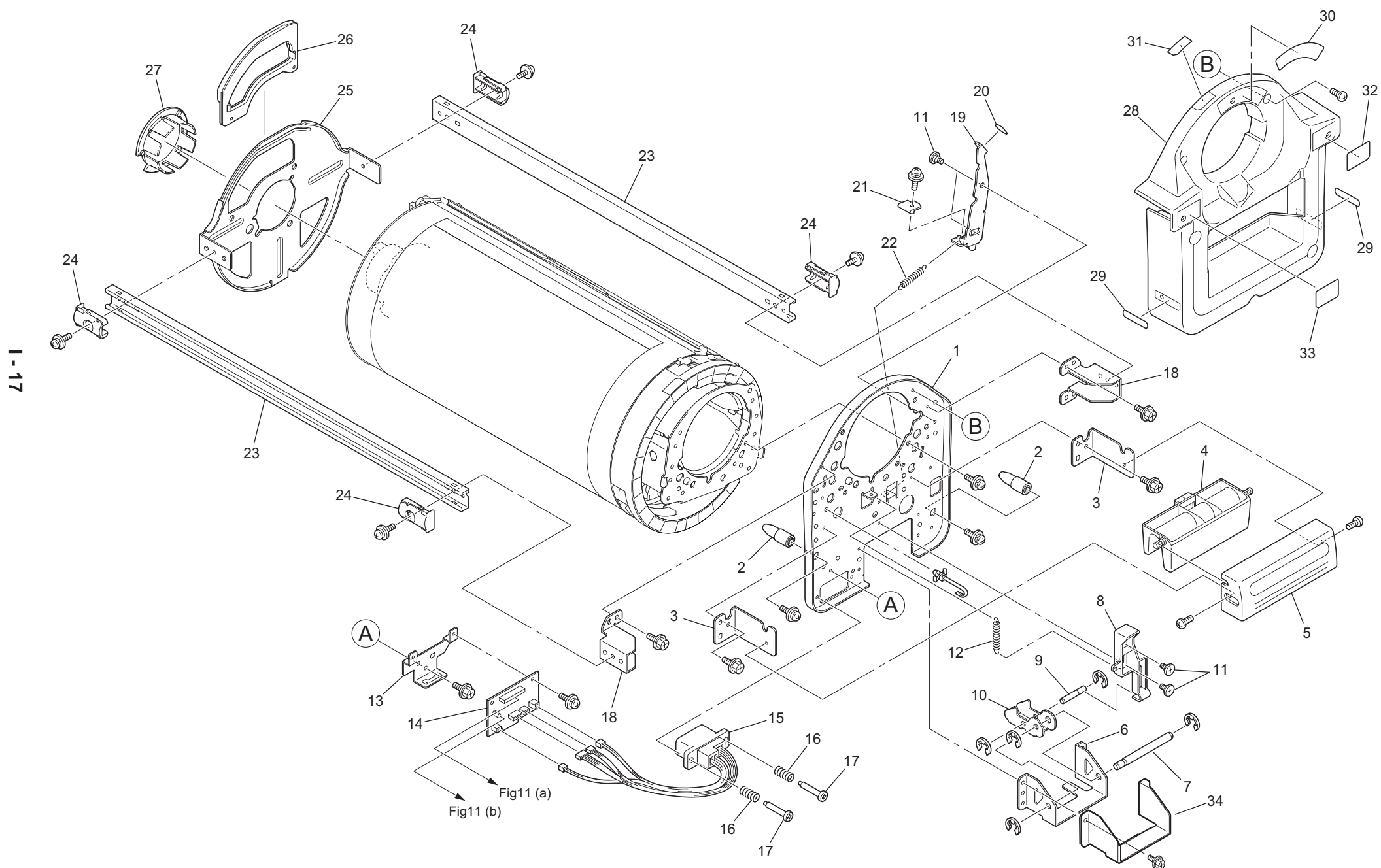


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No.	Part No.	Part Name	Q'ty	Remark
1	023-19007-108	*Pressure Shaft	1	
2	023-19013-108	*Paper Guide; Pressure	1	
3	023-19012-004	*Stopper; Pressure Roller	2	
4	023-19004-109	*Support Shaft; Pressure	1	
5	023-75071-056	*Pressure Roller Support; Front Ass'y	1	
6	023-75072-052	*Pressure Roller Support; Rear Ass'y	1	
7	023-75119-059	*Pressure Roller Ass'y; B4	1	RZ-23x
7	023-75120-057	*Pressure Roller Ass'y; A4	1	RZ-22x,RZ20x
8	635-17613-004	*Stepped Screw;6X1.8;M3X4	2	
9	607-10003-001	Metal;F16X22/19X6;26X2	2	
	023-75093-050	Timing Roller Assy(10-12)	1	
10	023-12501-000	*Timing Roller	1	
11	023-12503-002	*Bearing; Timing Roller	1	
12	612-02101-100	*Gear; M1X15X12	1	
13	607-16001-000	Metal;F10X15/14X6;18X2	2	
14	023-12507-105	Adj. Plate; Timing Roller	1	
15	639-00610-000	P Washer; 6X13.5X1	1	
16	601-10195-004	Bearing; Ddlf-1910ZZR	1	
17	030-14476-201	Load Spring	1	
18	023-12510-009	Collar; Load Spring	1	
19	030-14458-203	Fix Plate; Load Spring	1	
	023-75080-055	Guide Roller Assy(20-28)	1	
20	023-12511-005	*Guide Roller	1	
21	023-12515-000	*Support F; Guide Roller	1	
22	023-12545-007	*Adj. Plate; Guide Roller	1	
23	607-40001-003	*Metal;F8X11/10X5.5;14X2	1	
24	023-12519-006	*Lock Plate; Guide Roller	1	
25	023-12516-007	*Support R; Guide Roller	1	
26	023-12513-008	*Pressure Shaft; Guide Roller	1	
27	023-12512-001	*Shaft; Guide Roller	1	
28	023-12514-004	*Pressure Plate; Guide Roller	1	
29	023-12537-004	Stay Holder; Guide Plate	2	
	023-75079-057	Guide Plate Assy(30-33)	1	
30	444-33005-004	*Sensor; PS-117ND1	1	

[illegible]

Fig9. Drum Area (1)



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Fig10. Drum Area (2)

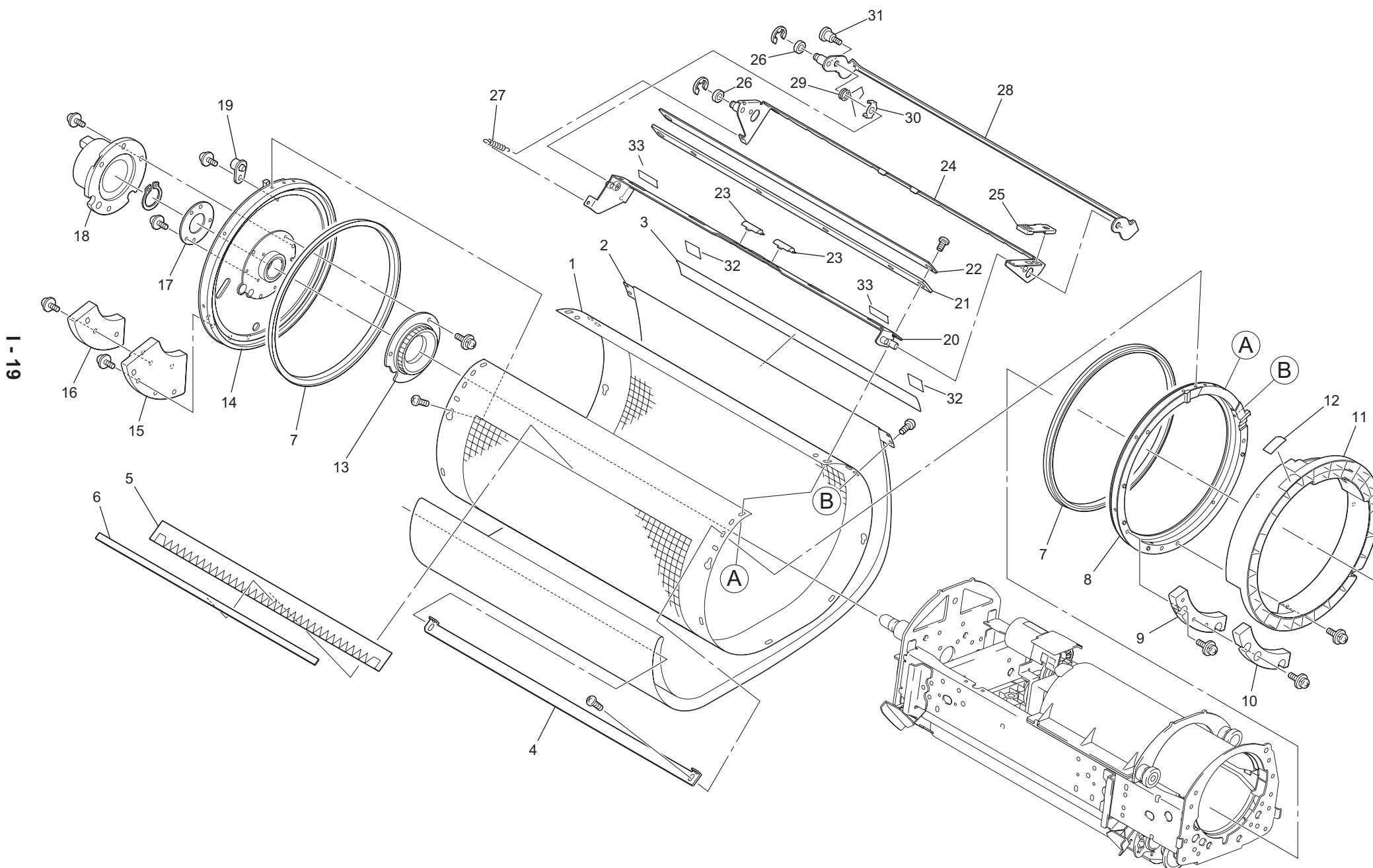


Fig10 Drum Area(2)

No.	Part No.	Part Name	Q'ty	Remark
1	023-75064-050	Drum Body; B4LL	1	RZ-23x
1	023-75066-052	Drum Body; LegalLL	1	RZ-22x
1	023-75065-056	Drum Body; A4LL	1	RZ-20x
2	023-17297-109	Screen Ass'Y L	1	
3	023-17004-209	light Absorber Strip(328X20)	1	
4	023-17003-008	Hanger Plate; Screen	1	
5	023-17409-306	Ink Blocking Sheet ; B4 LL	1	RZ-23x
5	023-17190-100	Ink Blocking Sheet; A4	1	RZ-22x,RZ-20x
6	023-17257-000	Seal Tape;B4	1	RZ-23x
6	023-17258-006	Seal Tape;A4	1	RZ-22x,RZ-20x
7	023-17007-003	Drum Seal	2	
8	023-17012-007	Flange Front	1	
9	023-17014-000	Weight Balance F; A	1	
10	023-17262-003	Weight Balance F; B	1	
11	023-17149-002	Flange Handle	1	
12	023-17307-007	B Position Marking Sticker	1	
13	023-17009-006	Flange Gear; Drum	1	
14	023-17006-007	Drum Flange Rear	1	
15	023-17011-000	Weight Balance R; A	1	
16	023-17261-007	Weight Balance R; B	1	
17	023-17263-000	Metal Stopper; Drum	1	
18	023-17008-107	Drum Shaft Joint	1	
19	023-17010-004	Boss; A Position Compensation	1	
	023-75112-054	Clamp Plate Assy(20-31)	1	
20	023-17067-103	*Clamp Plate Base	1	
21	023-17181-100	*Clamp Magnet	1	
22	023-17180-007	*Friction Sheet	1	
23	023-17251-001	*Spring; Clamp Plate Base	2	
24	023-17068-002	*Clamp Plate	1	
25	023-17191-106	*Release Lever; Clamp Plate	1	
26	023-17069-009	*Collar D12; Clamp	2	
27	023-17275-008	*Spring; Clamp Plate Close	1	
28	023-17071-100	*Projection Plate	1	
29	023-17073-006	*Spring; Projection Plate	1	

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Fig11. Drum Area (3)

I - 21

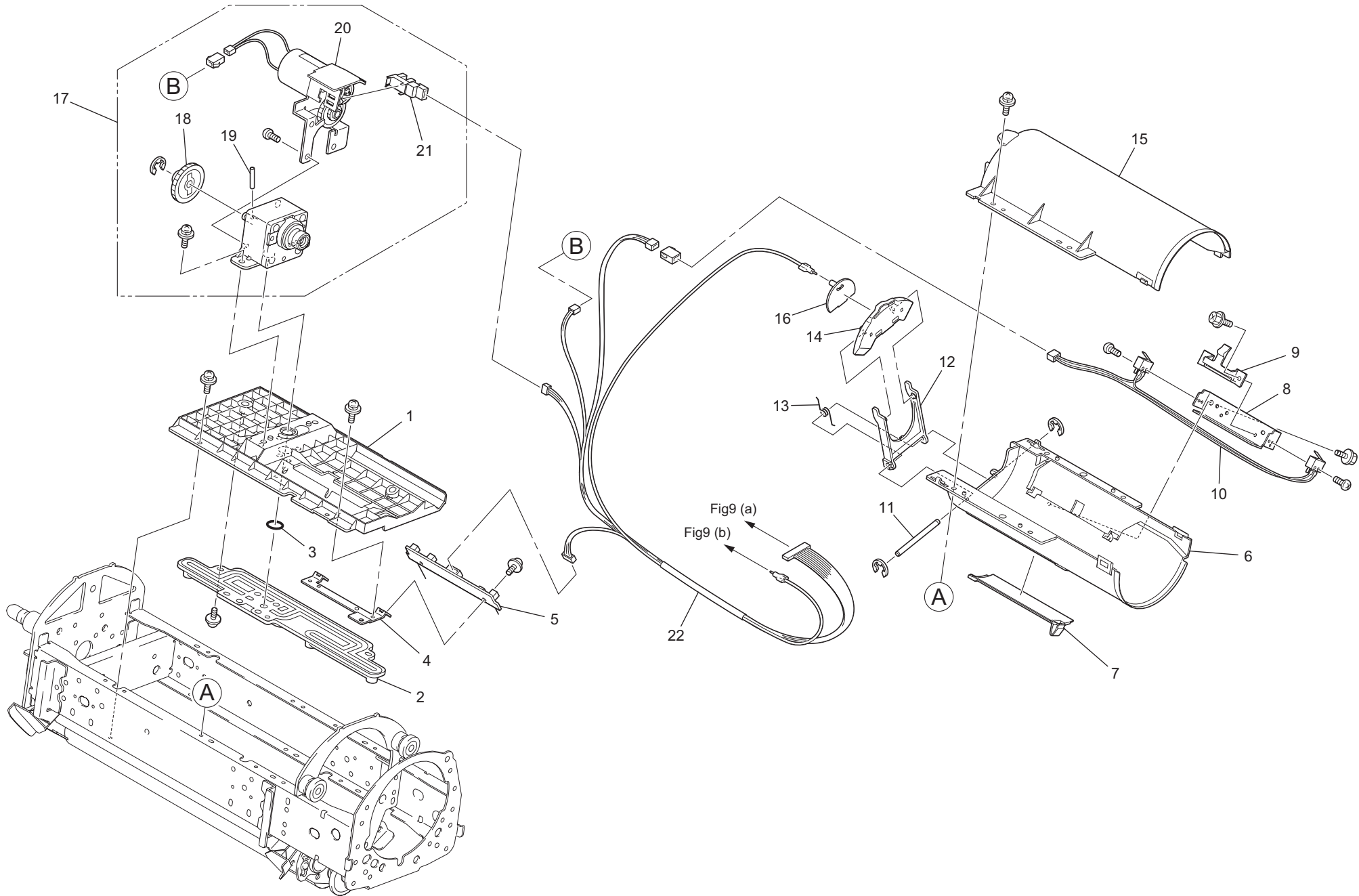


Fig11 Drum Area(3)

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Fig12. Drum Area(4)

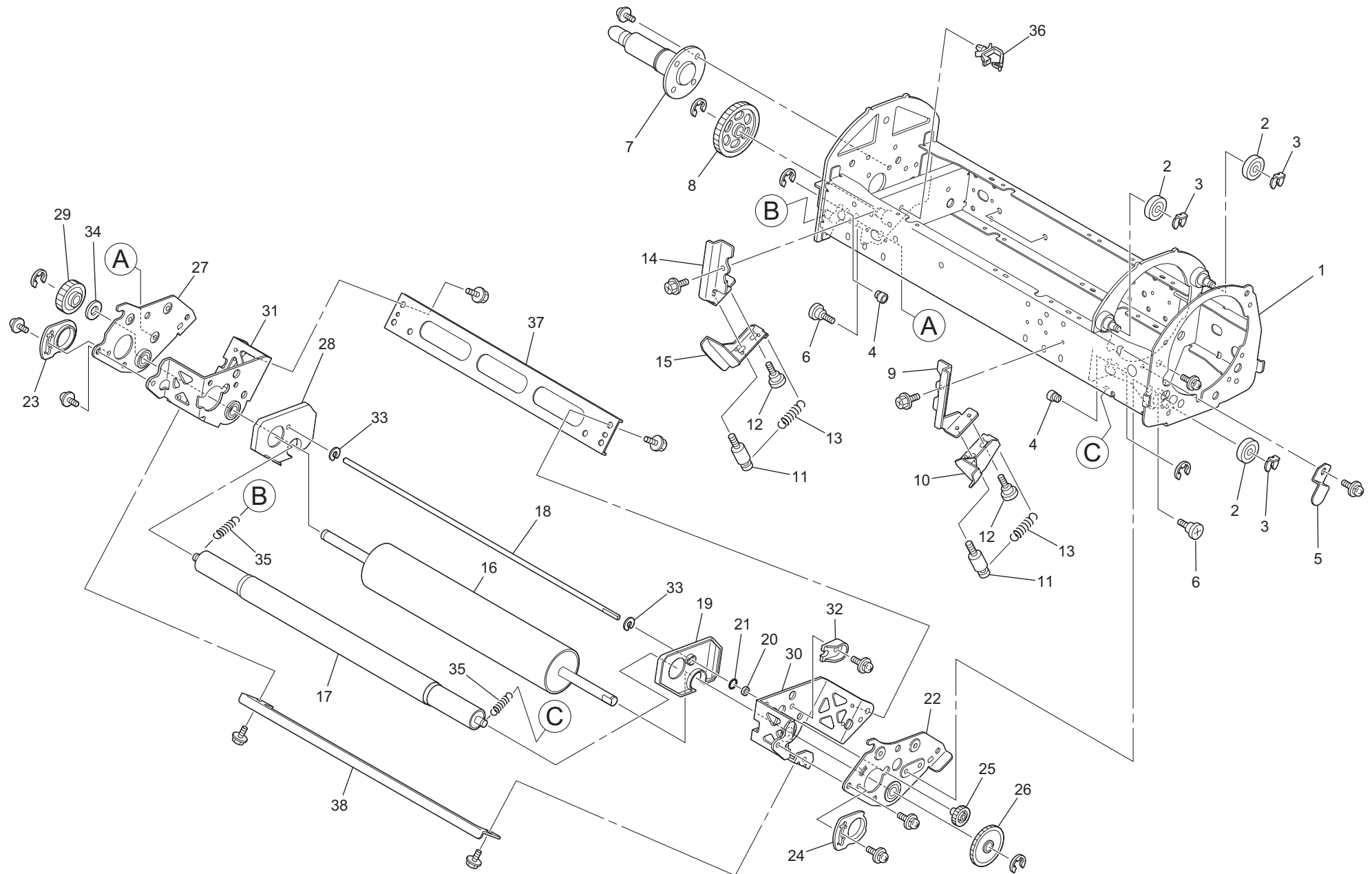
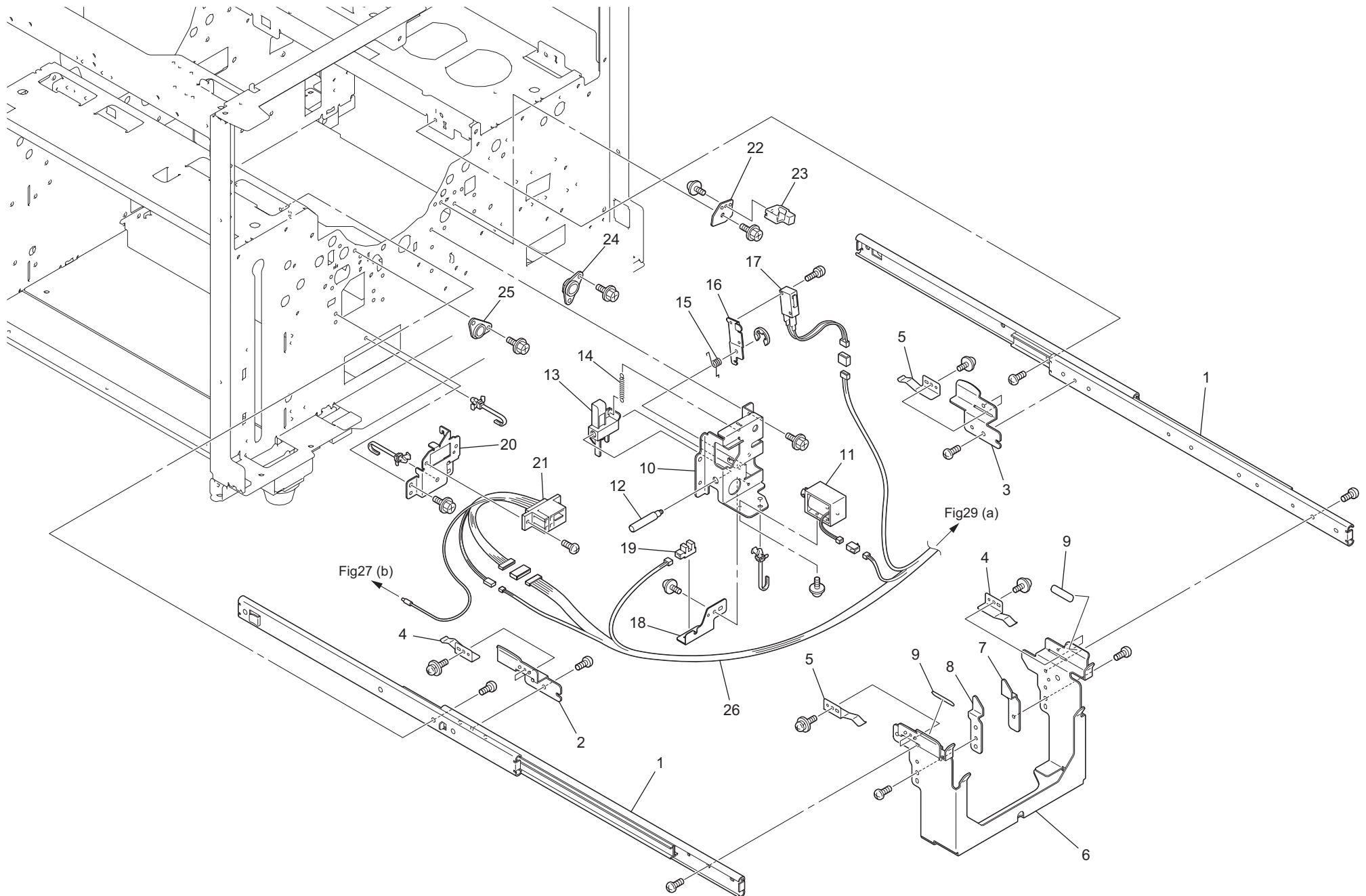


Fig12 Drum Area(4)

No.	Part No.	Part Name	Q'ty	Remark
1		Main Frame ; Drum	1	
2	023-17116-007	Flange Support Roller; Drum	3	
3	023-17197-007	Lock Ring 4	3	
4	023-17027-004	Cam; Squeegee Gap	2	
5	023-17246-008	Fixing Plate Drive ;A4	1	
6	635-17634-001	Stepped Screw;F6X3;M4X4	2	
7	023-17018-005	Center Shaft; Drum	1	
8	612-10026-001	Gear;M1X45X6	1	
9	023-17229-006	Base ; Ink Blocking Plate (Front)	1	
10	023-17227-003	Ink Blocking Plate; Front	1	
11	015-36317-100	Shaft Screw; Ink Blocking Plate	2	
12	635-17433-006	Step Screw	2	
13	015-36318-000	Spring; Ink Blocking Plate	2	
14	023-17228-000	Base ; Ink Blocking Plate (Rear)	1	
15	023-17226-007	Ink Blocking Plate; Rear	1	
16	023-17230-004	*Squeegee Roller ; B4	1	
17	023-17330-106	*Doctor Roller; Assy ;B4	1	
18	023-17239-001	*Ink Drive Shaft ; B4	1	
19	023-17041-007	*Block F; Squeegee	1	
20	607-03001-001	*Metal;S4X7X2	1	
21	640-60040-000	*O Ring;P4-1.9	1	
22	023-17126-002	*Side Frame F;Squeegee	1	
23	023-17334-004	*Adj. Plate R; Squeegee Gap	1	
24	023-17336-007	*Adj. Plate L; Squeegee Gap	1	
25	612-10027-008	*Gear;M0.8X19X4	1	
26	612-10028-004	*Gear;M0.8X43X3	1	
27	023-17125-006	*Side Frame R;Squeegee	1	
28	023-17040-000	*Block R; Squeegee	1	
29	612-10024-009	*Gear; M1x25x7 OWC	1	
30	023-17235-200	*Support Bracket F ;B4	1	
31	023-17234-107	*Support Bracket R ;B4	1	
32	023-17242-002	*Plate; Metal; Drive Shaft; Drum	1	
33	023-17341-000	*Collor ; Ink Drive Shaft	2	

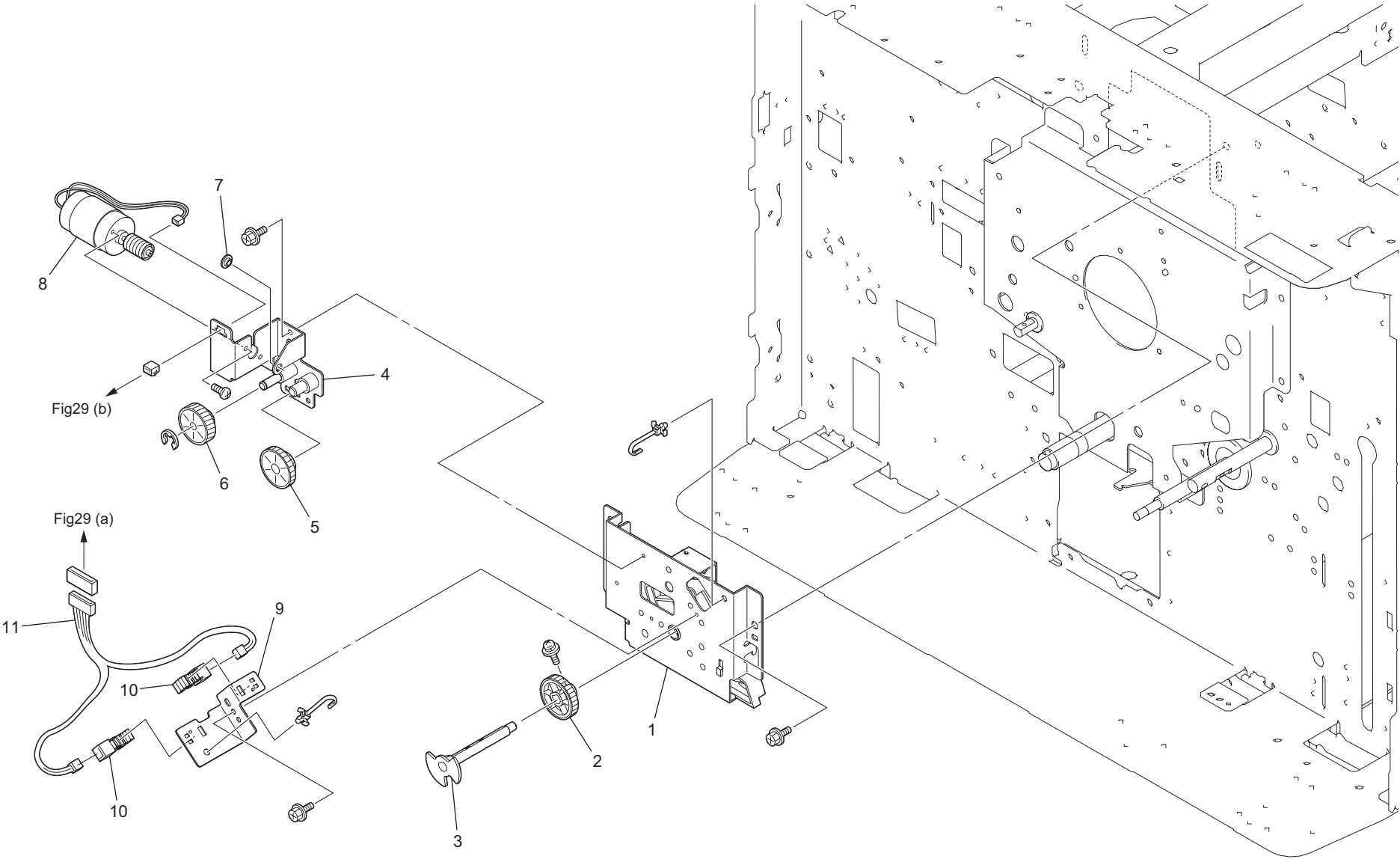
No.	Part No.	Part Name	Q'ty	Remark
34	639-00815-001	*Washer ; 8x16x1.5	1	
35	023-75092-053	Squeegee Unit;A4(16-34)	1	RZ-22x,20x
36	023-17209-005	*Squeegee Roller ;A4	1	
37	023-17331-102	*Doctor Roller Assy ;A4	1	
38	023-17211-000	*Ink Drive Shaft ; A4	1	
39	023-17041-007	*Block F; Squeegee	1	
40	607-03001-001	*Metal;S4X7X2	1	
41	640-60040-000	*O Ring;P4-1.9	1	
42	023-17126-002	*Side Frame F;Squeegee	1	
43	023-17334-004	*Adj. Plate R; Squeegee Gap	1	
44	023-17336-007	*Adj. Plate L; Squeegee Gap	1	
45	612-10027-008	*Gear;M0.8X19X4	1	
46	612-10028-004	*Gear;M0.8X43X3	1	
47	023-17125-006	*Side Frame R;Squeegee	1	
48	023-17040-000	*Block R; Squeegee	1	
49	612-10024-009	*Gear; M1x25x7 OWC	1	
50	023-17213-207	*Support Bracket F ;A4	1	
51	023-17214-106	*Support Bracket R ;A4	1	
52	023-17242-002	*Plate; Metal; Drive Shaft; Drum	1	
53	023-17341-000	*Collor ; Ink Drive Shaft	2	
54	639-00815-001	*Washer ; 8x16x1.5	1	
55	023-17333-008	Spring ; Doctor Roller	2	
56	665-02044-002	Wire Saddle;LWS-0711	1	
57	023-17421-	Support Plate A	1	
58	023-17422-	Support Plate B	1	
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Fig13. Drum-Rail Area



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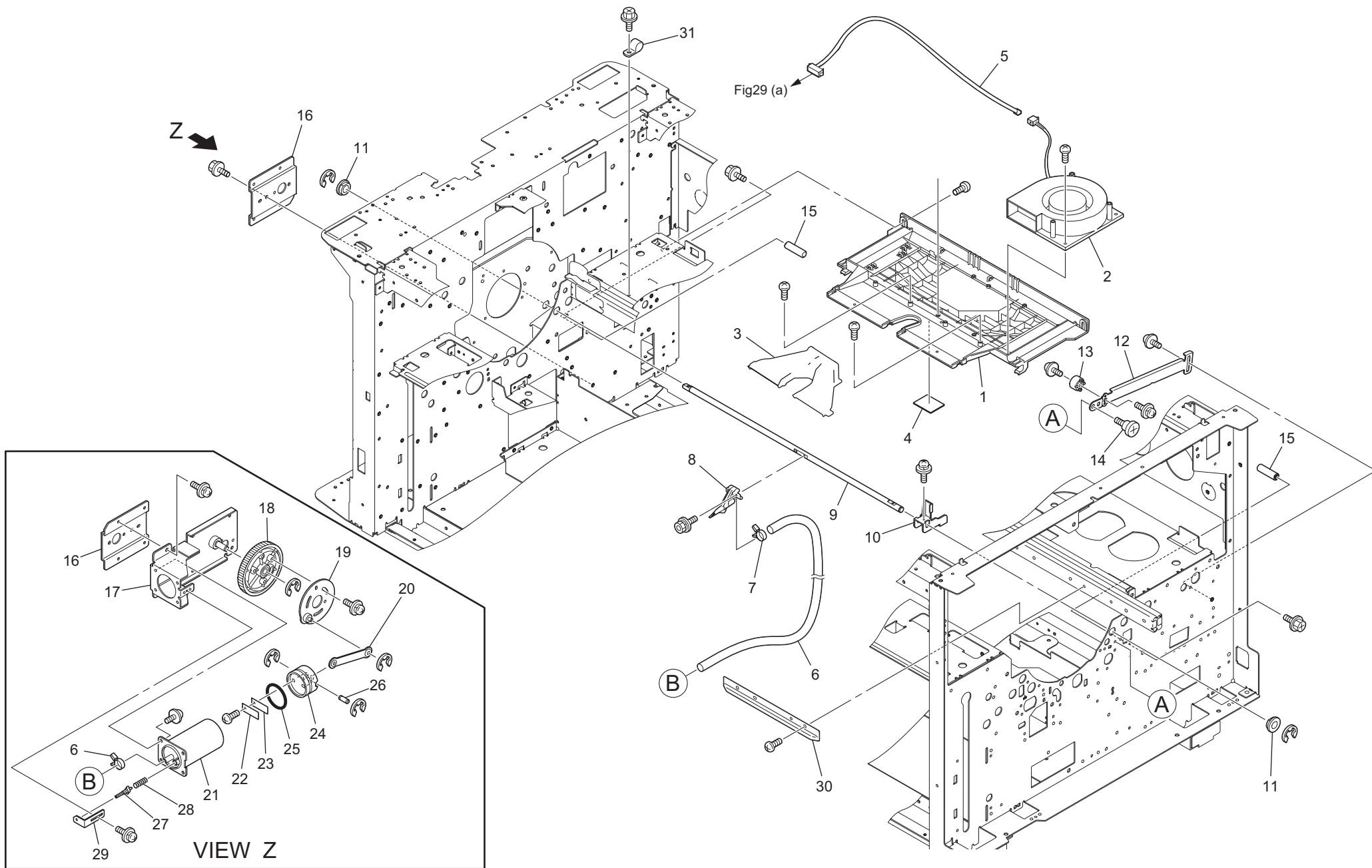
Fig14. Clamp Area



1 - 28

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Fig15. Separator Area



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No.	Part No.	Part Name	Q'ty	Remark
	023-75122-050	Separation Fan Assy ;LL(1-5)	1	
1	023-21017-102	*Base; Separation Fan	1	
2	490-41009-003	*Fan; D12F-24PLH1C10	1	
3	023-21020-006	*Air Nozzle A4	1	
4	023-21393-007	*light Absorber Strip(35X28)	1	
5	023-21704-002	*Wire Harness; Separation Fun LL	1	
6	023-21016-106	Air Hose; Separator	1	
7	665-02901-002	Power Band T10	2	
8	023-21002-008	Separator	1	
9	023-21006-003	Shaft; Separator	1	
10	023-21007-000	Release Lever; Separator	1	
11	607-15000-000	Metal;F8X13/12X5;16X2	2	
12	023-21003-004	Adjustment Plate	1	
13	023-21005-007	Stopper; Separator	1	
14	635-17614-108	Stepped Screw;6X1.7;M4X4	1	
15	020-13114-105	Fixing Pin	2	
16	023-21027-000	Spacer; Cylinder Base; Air Pump	1	
	023-75077-054	Air Pump Assy(17-29)	1	
17	023-21013-204	*Cylinder Base Bracket; Air pump	1	
18	612-03106-008	*Gear;M1X80X10	1	
19	023-21023-102	*Timing Plate; Air Pump	1	
20	019-13511-103	*Arm;Air Pump	1	
21	023-21021-002	*Cylinder; Air Pump	1	
22	019-13517-004	*Cylinder Valve II ; Air Pump	1	
23	019-13518-000	*Cylinder Valve Sheet ; Air Pump	1	
24	019-13516-105	*Piston Head II;Air Pump	1	
25	640-67340-009	*O Ring;34-3.6	1	
26	019-13512-002	*Arm Shaft;Air Pump	1	
27	023-21011-104	*Adj. Valve; Air blow	1	
28	023-21010-000	*Spring; Adj. Valve; Air Blow	1	
29	023-21009-002	*Adj. Plate; Air blow	1	
30	023-21001-001	Release Plate	1	
31	665-02021-606	Clip; NK-7N Nikko Nylon ClIp	1	

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Fig16. Suction Area

I - 31

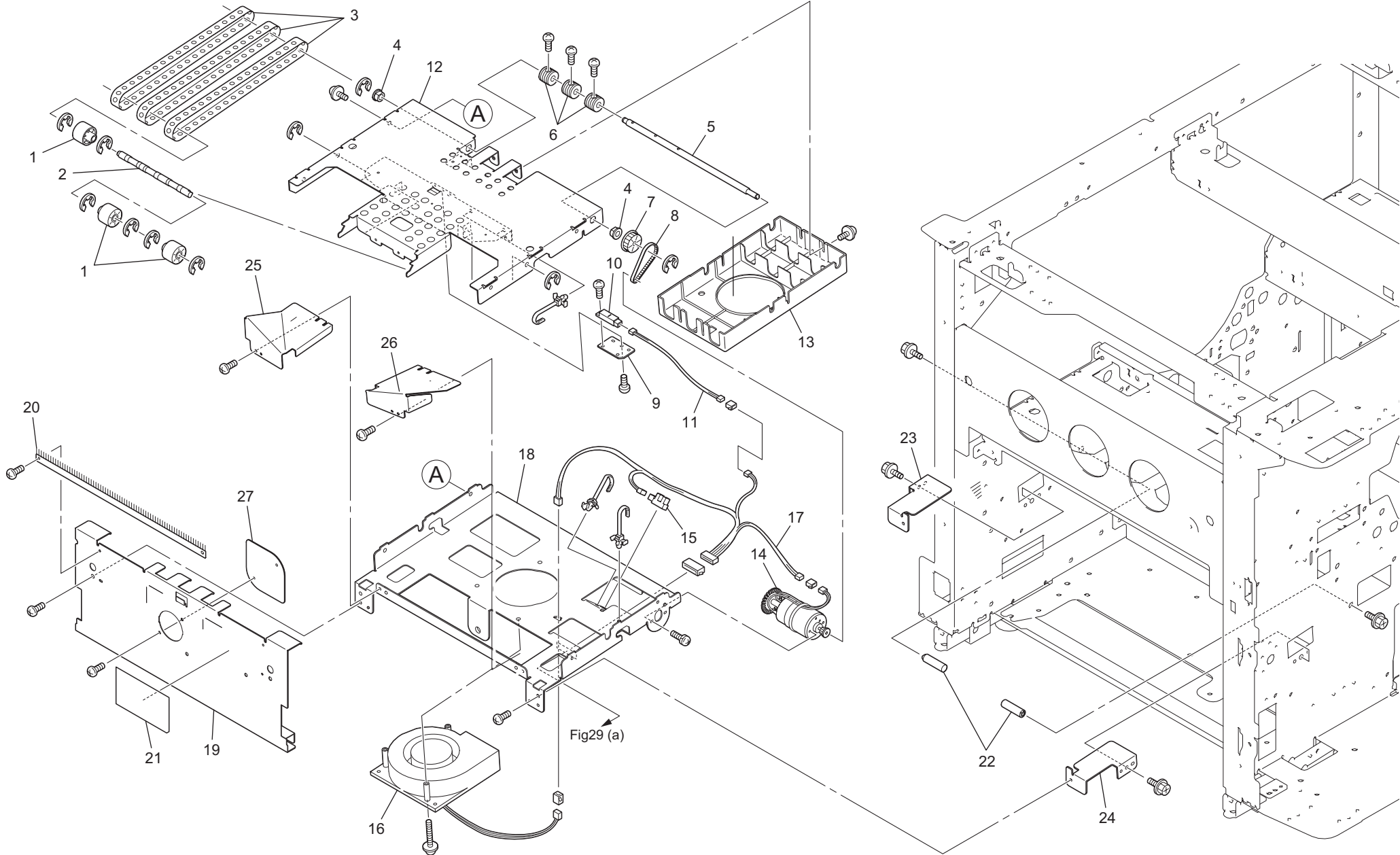


Fig16.Suction Area

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I - 32

Fig17. Paper Receiving Tray Area

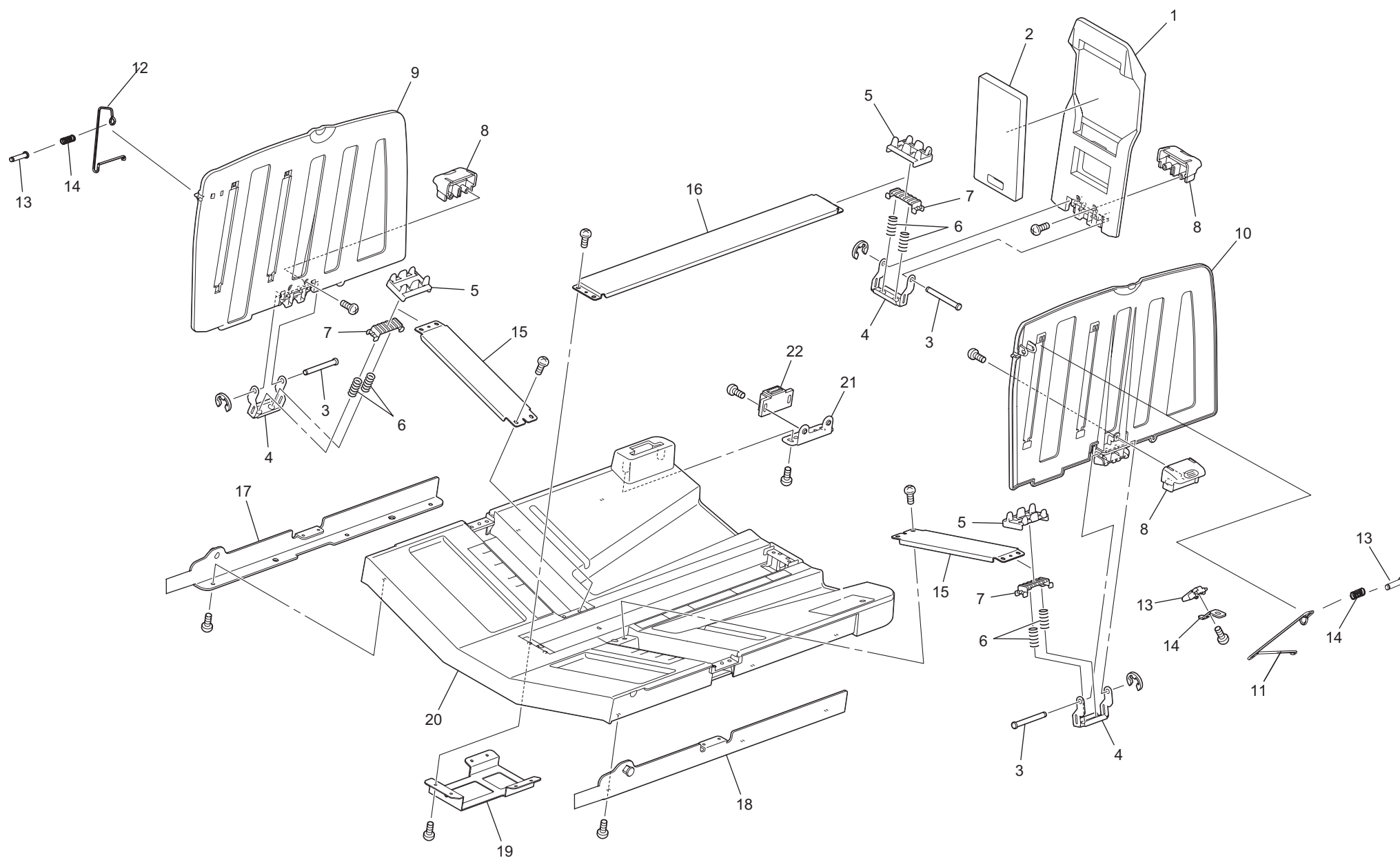


Fig17.Paper Receiving Tray Area

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Fig.18 Scanner Area(1)

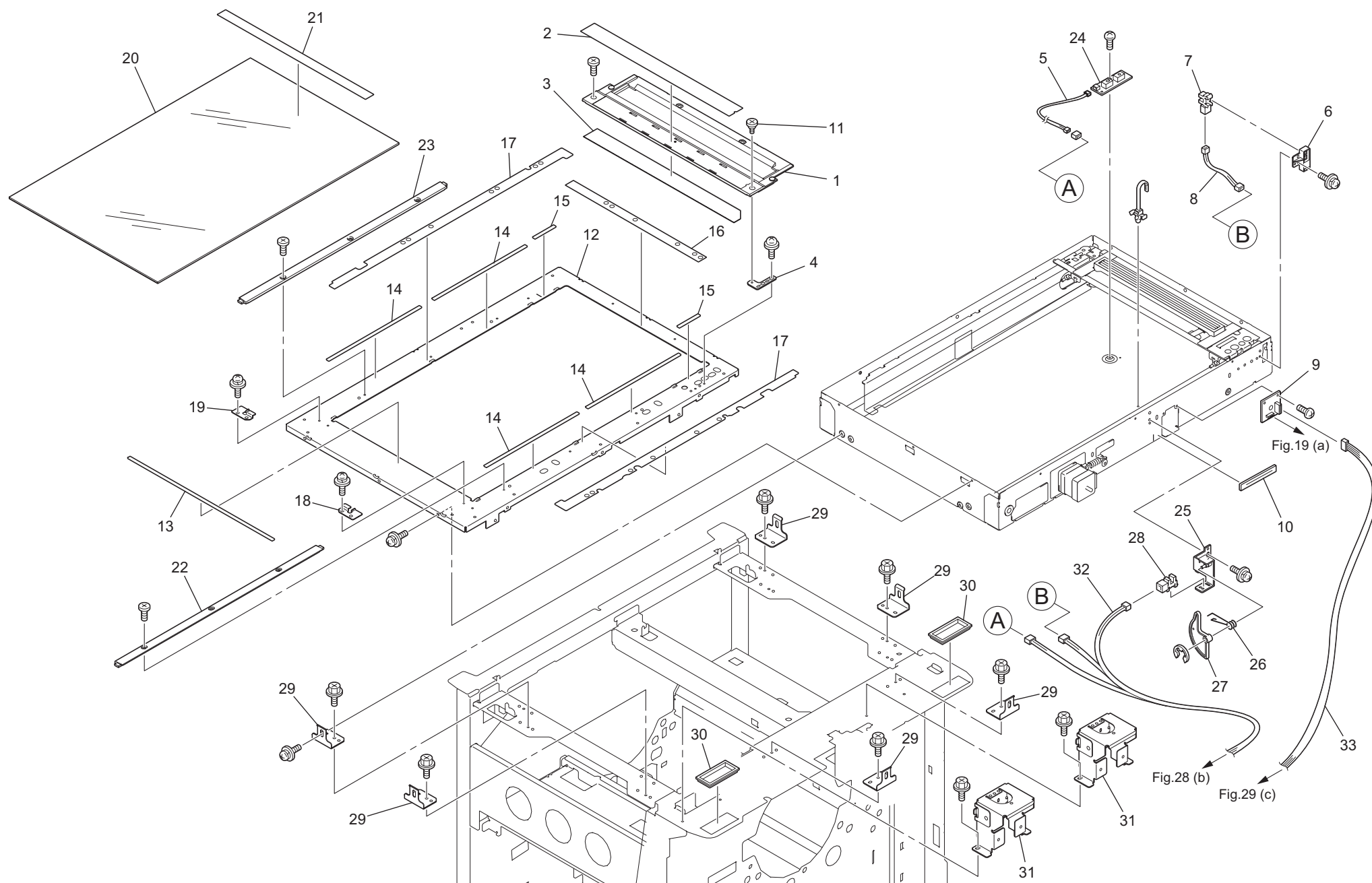
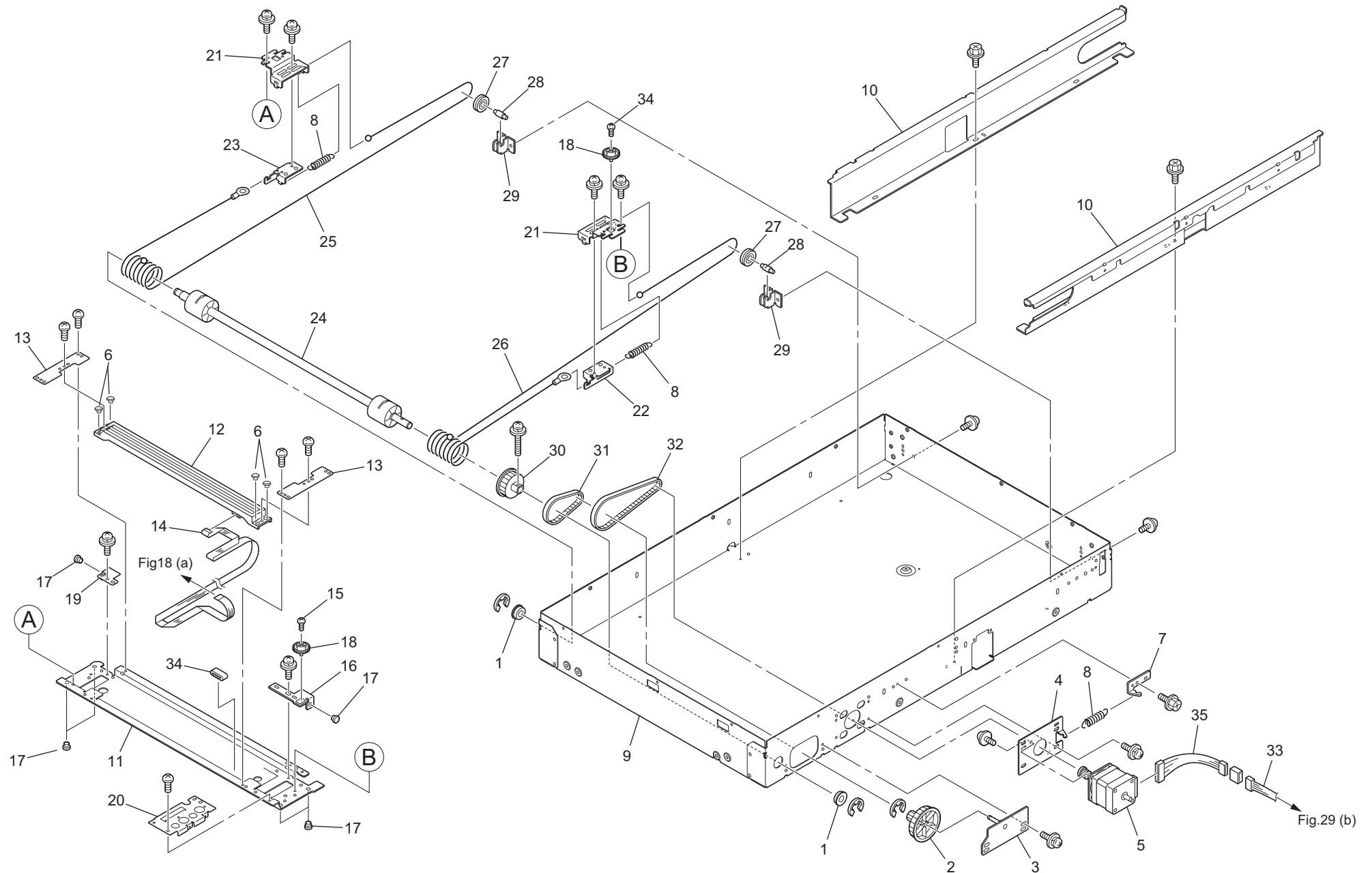


Fig18 Scanner Area(1)

No.	Part No.	Part Name	Q'ty	Remark
	023-74003-057	Scanner Unit II (Fig18 1-24,,Fig19 1-32)	1	
1	023-30017-107	*Original Stopper	1	
2	023-30064-008	*Seal; Original Paper Side	1	
3	023-30061-203	*Reinforce Plate G; Scanner	1	
4	023-30065-004	*Adjuster; Stage Glass	1	
5	023-30034-001	*Junction Wire Harness; Original Detection S	1	
6	023-30059-004	*Bracket; HP sensor; Scanner	1	
7	444-30008-002	*Sensor; LG-248NI1	1	
8	023-30076-006	*Wire Harness; Scanner HP Sensor	1	
9	023-30039-100	*FLx-PCB	1	
10	023-30066-000	*Spacer; Cable; Scanner	1	
11	635-17713-009	*Stepped Screw ; F7×1;M3×3.2	1	
12	023-30010-200	*Frame Upper; Scanner	1	
13	023-30068-003	*Spacer 2; Stage Glass	1	
14	023-30067-007	*Spacer 1; Stage Glass	4	
15	023-30060-002	*Spacer; Stage Glass 3; Scanner	2	
16	023-30078-009	*Sheet ; Stage Glass 2	1	
17	023-30077-100	*Sheet ; Stage Glass	2	
18	023-30018-006	*Fixing Plate R; Stage glass	1	
19	023-30019-002	*Fixing Plate F; Stage Glass	1	
20	023-30016-003	*Stage Glass	1	
21	023-30069-000	*Shading Sheet; Scanner	1	
22	023-30014-000	*Cover Spacer Rear; Scanner	1	
23	023-30015-007	*Cover Spacer Front; Scanner	1	
24	444-43008-001	*Sensor ; PS-RS03	1	
	023-74049-006	FB Actuator Assy(5-8)	1	
25	023-30071-004	*Bracket; Stage cover closing sensor	1	
26	021-17129-104	*Spring; Actuator	1	
27	023-30073-007	*Actuator 2; Scanner	1	
28	444-30008-002	*Sensor; LG-248NI1	1	
29	023-30003-009	Bracket; FB Scanner	6	
30	665-04055-001	SB-6025	2	
31	023-30002-002	Hinge Bracket; Flat Bed	2	
32	023-53018-100	Wire Harness ; FB Upper LL	1	

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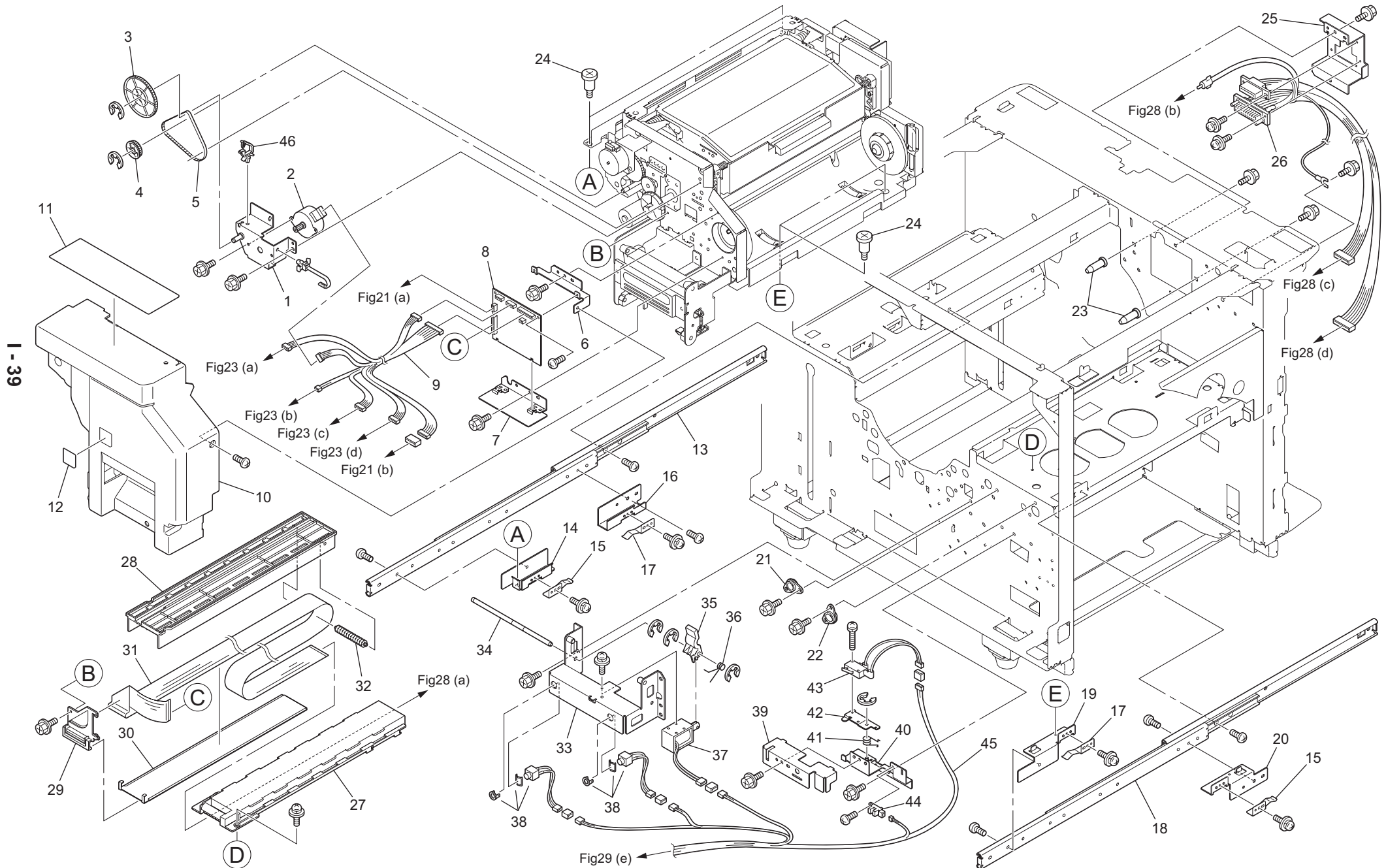
Fig 19 Scanner Area(2)



No.	Part No.	Part Name	Q'ty	Remark
1	607-15006-009	*Metal;F8×16×5;18×1.1	2	
2	611-00007-001	*Pulley; P20+P90-S1.5M	1	
3	023-30041-008	*Holder; Shaft; Scanner	1	
4	023-30036-004	*Holder; Scanner Motor 1	1	
5	490-31009-005	*Motor ; KH42JM2B174	1	
6	023-30057-001	*Slider ; CIS-1	4	
7	023-30040-001	*Hook ; Spring	1	
8	023-30028-001	*Spring ; Carriage	3	
9	023-30011-001	*Frame Lower; Scanner	1	
10	023-30012-008	*Guide Rail 1; Scanner	2	
11	023-30020-205	*Image Scanner Carriage; B4	1	
12	444-60001-100	*Image Scanner ;DL112-05R	1	
13	023-30021-007	*Plate Spring 1; Image Scanner	2	
14	023-30033-102	*Flexible Wire Harness ; CIS	1	
15	635-17332-005	*Stepped Screw;;F3×2.7;M2×3	2	
16	023-30063-109	*Adjuster 2; Scanner	1	
17	023-30023-000	*Slider ; Carriage	6	
18	023-30055-106	*Adj. Cam ; Scanner	2	
19	023-30062-005	*Adjuster 1; Scanner	1	
20	023-30074-100	*Holding Plate; Adj. Cam; Image Scanner	1	
21	023-30025-002	*Wire Holder 1; Scanner	2	
22	023-30026-009	*Wire Holder 2 Rear; Scanner	1	
23	023-30027-005	*Wire Holder 2 Front; Scanner	1	
24	023-30051-003	*Shaft ; Wire Pulley	1	
25	023-30048-002	*Wire F ; Scanner RZ2	1	
26	023-30047-006	*Wire R ; Scanner RZ2	1	
27	611-01900-001	*Pulley;D19×D5	2	
28	023-30032-009	*Shaft; Pulley; Scanner	2	
29	023-30030-006	*Holder; Pulley; Scanner	2	
30	611-00009-004	*Pulley; P75-S1.5M-6	1	
31	620-01686-009	*Belt; 168-1.5M-6	1	
32	620-02616-004	*Belt; 261-1.5M-6	1	
33	023-53018-100	Wire Harness ; FB Upper ; LL	1	
34	435-00048-000	Ferite Core ; E04FA21	1	

[illegible]

Fig20. Master-Making Area (1)



No.	Part No.	Part Name	Q'ty	Remark
	023-75131-059	Master Making Unit B4LL(Fig20 1-9, Fig21-2	1	RZ-23x
	023-75132-055	Master Making Unit A4LL(Fig20 1-9, Fig21-2	1	RZ-20x,22x
1	023-28195-006	*Bracket; Write Pulse Motor	1	
2	490-33015-002	*Motor; PM42L-048-ZVN6	1	
3	613-10002-002	*Gear Pulley; M0.5X130+17-2	1	
4	611-90010-006	*Pulley Ass'Y; P40-2Gt-5	1	
5	620-80002-004	*Belt; 230-2GT-4	1	
6	023-28016-004	*Bracket; PCB; M.-Making	1	
7	023-28401-005	*Bracket Bottom; Master Making PCB	1	
8	023-28250-201	*Master Making PCB	1	
9	023-28239-208	*Wire Harness; M.-M Unit	1	
10	023-28222-003	Front Cover; M.-M. Unit	1	
11	023-28944-009	Seal;Setting Master;Pic.	1	
12	023-28428-000	Seal; Master Making Unit Cover	1	
13	023-17063-000	Slide Rail	1	
14	023-28001-007	Bracket Front Upper; Rail; M.-M.	1	
15	023-17139-104	Pre-Pressure Spring; Right; Drum	2	
16	023-28002-003	Bracket Rear Upper; Rail; M.-M.	1	
17	023-17140-102	Pre-Pressure Spring; Left; Drum	2	
18	023-28402-001	Slide Rail 2	1	
19	023-28084-000	Bracket Front Bottom; Rail; M.-M.	1	
20	023-28012-009	Bracket Rear Bottom; Rail; M.-M.	1	
21	030-16109-001	Shaft Holder; Left	1	
22	030-16108-005	Shaft Holder; Right	1	
23	023-28086-002	Positioning Pin; Rear; M.-M	2	
24	635-10004-002	Stepped Screw;F5X5;M3X3	4	
25	023-28085-006	Bracket; Drawer Connector; M.-M.	1	
26	023-53004-100	TPH Drawer Connector H; Drive	1	
27	023-28199-001	Guide Lower; Flexible Wire; M.-M	1	
28	023-28117-005	Guide Upper; Flexible Wire; M.-M	1	
29	023-28010-006	Guide Bracket;Wire Harness; M.-M.	1	
30	023-28353-000	Holding Plate; Wire Harness; M.-M.	1	
31	023-28238-104	Flexible Wire; M.-M	1	
32	023-28200-000	Guide Roller; Wire Harness; M.-M.	1	

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Fig21. Master-Making Area (2)

I - 41

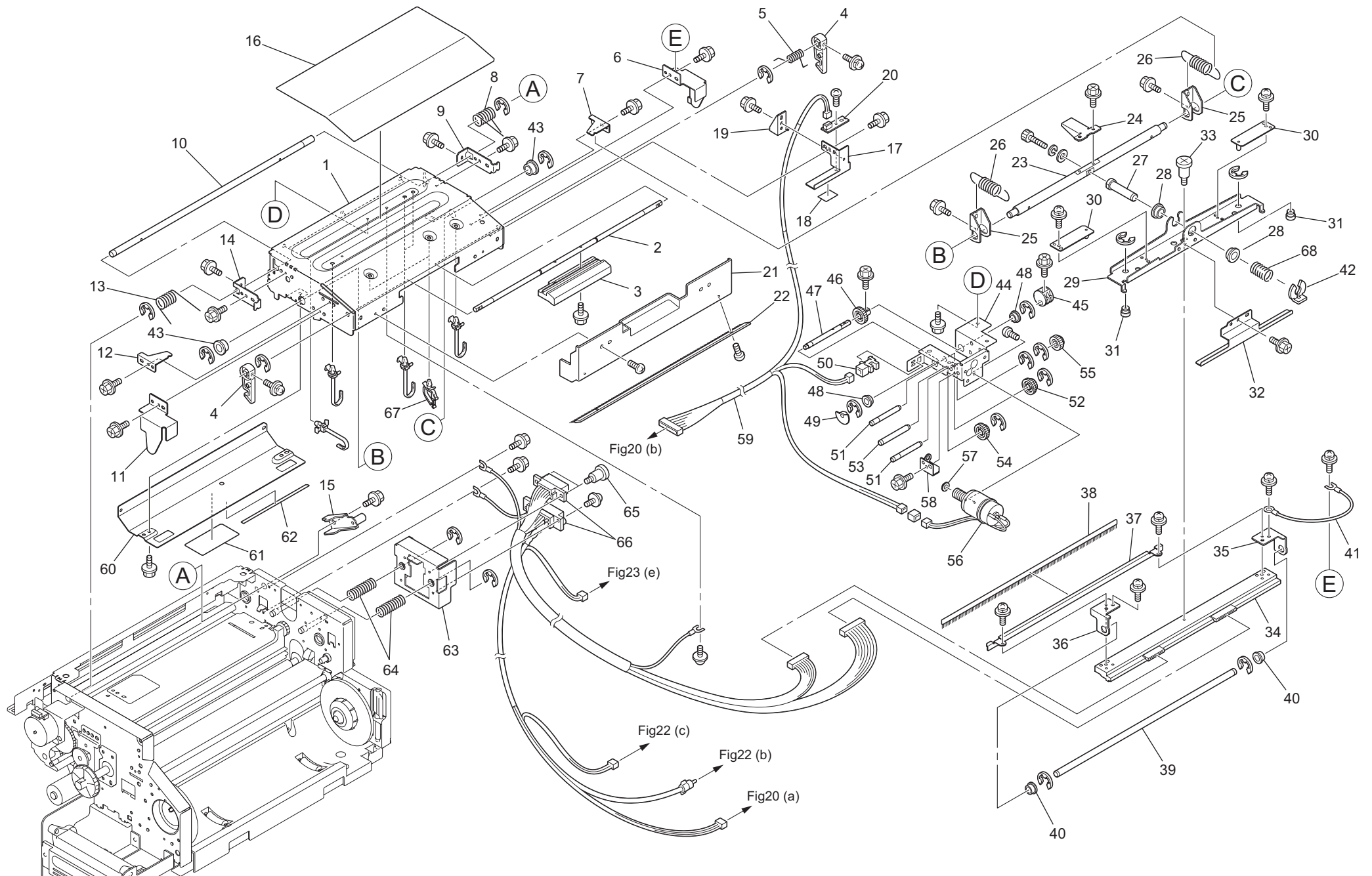


Fig21 Master Making Area(2)

I - 42

No.	Part No.	Part Name	Q'ty	Remark
1	023-28150-207	*Frame; M-M Upper Unit	1	
2	023-28157-007	*Shaft; Handle; M-M Up	1	
3	023-28236-004	*Hook Lever; M.-M Up	1	
4	023-28237-000	*Hook; M.-M Up	2	
5	023-28356-000	*Hook Spring; M.-M Up	1	
6	023-28253-103	*Pushing Plate R; Set-Guide Plate	1	
7	023-28152-005	*Spring Hook Bracket Rear; TPH Pressure	1	
8	023-28156-000	*Spring Rear; M.-M Up	1	
9	023-28252-107	*Pivot Support Plate Rear; M.-M Up	1	
10	023-28154-105	*Shaft; M.-M Upper Unit	1	
11	023-28215-201	*Pushing Plate F; Set-Guide Plate	1	
12	023-28381-004	*Bracket Front; TPH Pressure spring	1	
13	023-28155-004	*Spring Front; M.-M Up	1	
14	023-28151-106	*Pivot Support Plate Front; M.-M Up	1	
15	023-28177-105	*Safety Stopper; M.-M Up	1	
16	023-28426-105	*Seal; Master Making Unit	1	
17	023-28419-001	*Upper Bracket B4; Master End Sensor	1	RZ-23x
17	023-28420-000	*Upper Bracket A4; Master End Sensor	1	RZ-20x,22x
18	023-28431-001	*light Absorber Strip(21X15)	1	
19	023-28427-004	*Cover; Master End Sensor	1	
20	444-42030-305	*Sensor (Rcv); KH0854-01	1	
21	023-28162-000	*Bottom Cover; TPH; M.-M.	1	
22	023-28410-004	*De-Electricity Brush ; A3	1	
23	023-28158-100	*Pivot Shaft; TPH	1	
24	023-28160-008	*Pressure Release Plate; TPH Press	1	
25	023-28159-301	*Pressure Lever Bracket; M.-M Up	2	
26	023-28344-001	*TPH Pressure Spring 23	2	
27	023-28173-100	*TPH Alignment Shaft	1	
28	607-16004-000	*Metal;F10X14*6;18X2	2	
	023-75074-055	*TPH Assy KB4(29-41)	1	
29	023-28256-404	**TPH holder; KB4	1	
30	023-28387-002	**TPH Pressure Assist Plate; B4	2	
31	023-28412-104	**TPH Boss	2	
32	023-28386-006	**Protection Plate; TPH connector KB4	1	

No.	Part No.	Part Name	Q'ty	Remark
33	635-10005-009	**Stepped Screw;F6x7.2;M3x4	1	
34	444-80003-001	**TPH ; KYT-256-12	1	
35	023-28254-100	**Plate K-Rear; TPH	1	
36	023-28255-106	**Plate K-Front; TPH	1	
37	023-28257-109	**Bracket; TPH Brush; KB4	1	
38	023-28414-000	**De-electricity Brush; TPH B4	1	
39	023-28258-008	**Holding roller; KB4	1	
40	607-10005-004	**Metal;F8x10x3;11.2x0.6	2	
41	488-90030-109	**Ground Wire; U3-55-R3	1	
42	019-11812-106	*Lock Ring	1	
43	607-15007-005	*Metal;F8X12X7;16X1.5	2	
44	023-28168-009	*Bracket; TPH pressure motor	1	
45	023-28165-000	*Cam; TPH Pressure	1	
46	612-10010-008	*Gear;M1X20X6	1	
47	023-28166-006	*Shaft; TPH Pressure Cam	1	
48	607-13000-402	*Metal;F6X10/9X6:12 X 1.5	2	
49	023-28361-003	*Pressure Detection Plate; TPH	1	
50	444-30008-002	*Sensor; LG-248NI1	1	
51	023-28213-004	*Shaft; Gear; TPH lift Motor	2	
52	612-80006-008	*Gear;M0.8X25+M0.8X14	1	
53	023-28433-004	*Shaft; Gear 8; TPH lift Motor	1	
54	612-80007-004	*Gear;M0.8X25+M1X14	1	
55	612-80008-000	*Gear; M0.8X20+M0.8X14	1	
56	023-74001-046	*Motor Assy (CWRS-445PA)	1	
57	030-19205-001	*Support; Clamp Worm	1	
58	023-28172-006	*Holding Plate; Worm Gear	1	
59	023-28240-206	*Wire Harness; M.-M Upper Unit	1	
60	023-28328-103	*Gear Cover; M.-M UP	1	
61	023-28942-103	*Seal; TPH Cleaning; Pic.	1	
62	023-28423-009	*Seal; TPH; Pic	1	EP,UP
62	023-28424-005	*Seal; TPH; Eng.	1	AW,AN,UI
63	023-28382-205	*Bracket; TPH Drawer Connector UP	1	
64	023-28078-000	*Spring; Drawer Connector	2	
65	635-10002-000	*Stepped Screw;F4X4.5;M3X4	2	

I - 43

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Fig22. Master-Making Area (3)

I - 44

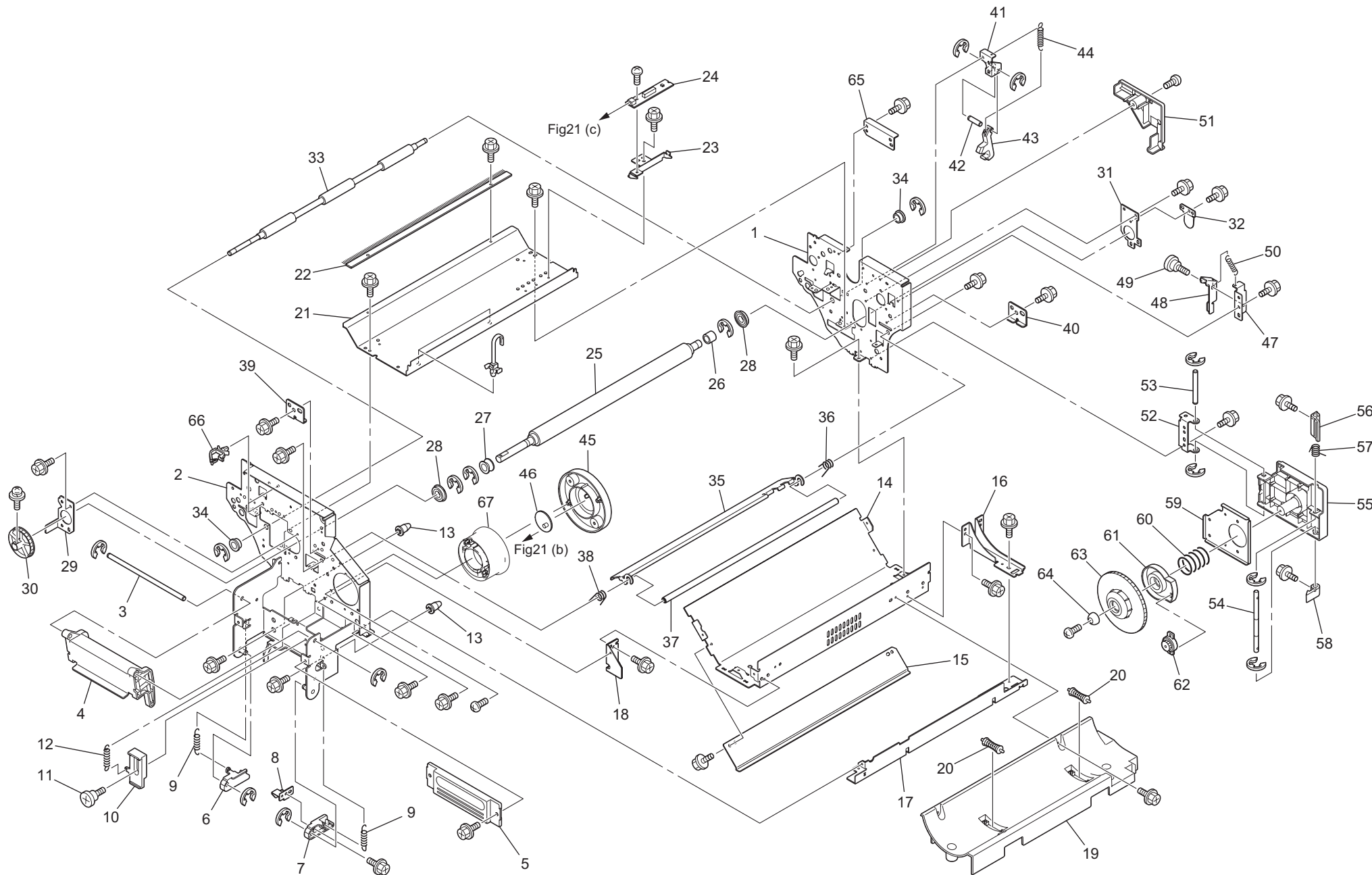


Fig22 Master Making Area(3)

I - 45

No.	Part No.	Part Name	Q'ty	Remark
1	023-28092-207	*Rear Frame; M.-M Unit	1	
2		*Front Frame; M.-M Unit A'Ssy	1	
3	023-28338-001	*Shaft; Handle; M-M	1	
4	023-28070-009	*Handle; M.-M.	1	
5	023-28343-005	*Guide; Handle; M.-M.	1	
6	023-28206-105	*Hook Left; Handle; M.-M.	1	
7	023-28071-102	*Hook Right; Handle; M.-M.	1	
8	023-28207-004	*Actuator plate; M.-M. Set Sensor	1	
9	023-28072-001	*Spring; Hook; M-M	2	
10	023-28336-009	*Handle Stopper; M.-M.	1	
11	635-17423-000	*Stepped Screw;F4X2.2;M3X4	2	
12	023-28209-007	*Spring; Handle; M-M	1	
13	023-28082-007	*Positioning Pin; Front; M.-M	2	
14	023-28013-200	*Bottom Stay; M.-M Unit	1	
15	023-28251-003	*Slide Guide 2; M.-M.	1	
16	023-28074-101	*Reinforcement Plate; M.-M. Frame	1	
17	023-28073-008	*Lower Stay; M.-Making	1	
18	023-28245-003	*Reinforce Plate; Lower; M.-M. Unit	1	
19	023-28124-109	*Master Roll Holder; Bottom	1	
20	023-28210-005	*Master Guide Roller	2	
21	023-28015-008	*Box Stay; M.-Making	1	
22	014-15011-004	*De-Electricity Bar ; M.-M.; A3	1	
23	023-28417-009	*Lower Bracket; Master End Sensor	1	
24	444-42029-200	*Sensor (Send); KH0854-00	1	
	023-75117-056	*Write Roller Assy LL(25-27)	1	
25	023-28262-102	**Write Roller; D13-B4	1	
26	019-35025-008	**liner	1	
27	023-28432-105	**Write Roller Liner 3	1	
28	601-10228-000	*Bearing;6900ZZNR	2	
29	023-28342-106	*Bracket Front; Write Roller	1	
30	611-90012-009	*Pulley; P70-2Gt-5	1	
31	023-28341-002	*Bracket Rear; Write Roller	1	
32	023-28380-008	*Pressure Plate; Write Roller	1	
33	023-28271-004	*Stocker Roller; B4	1	

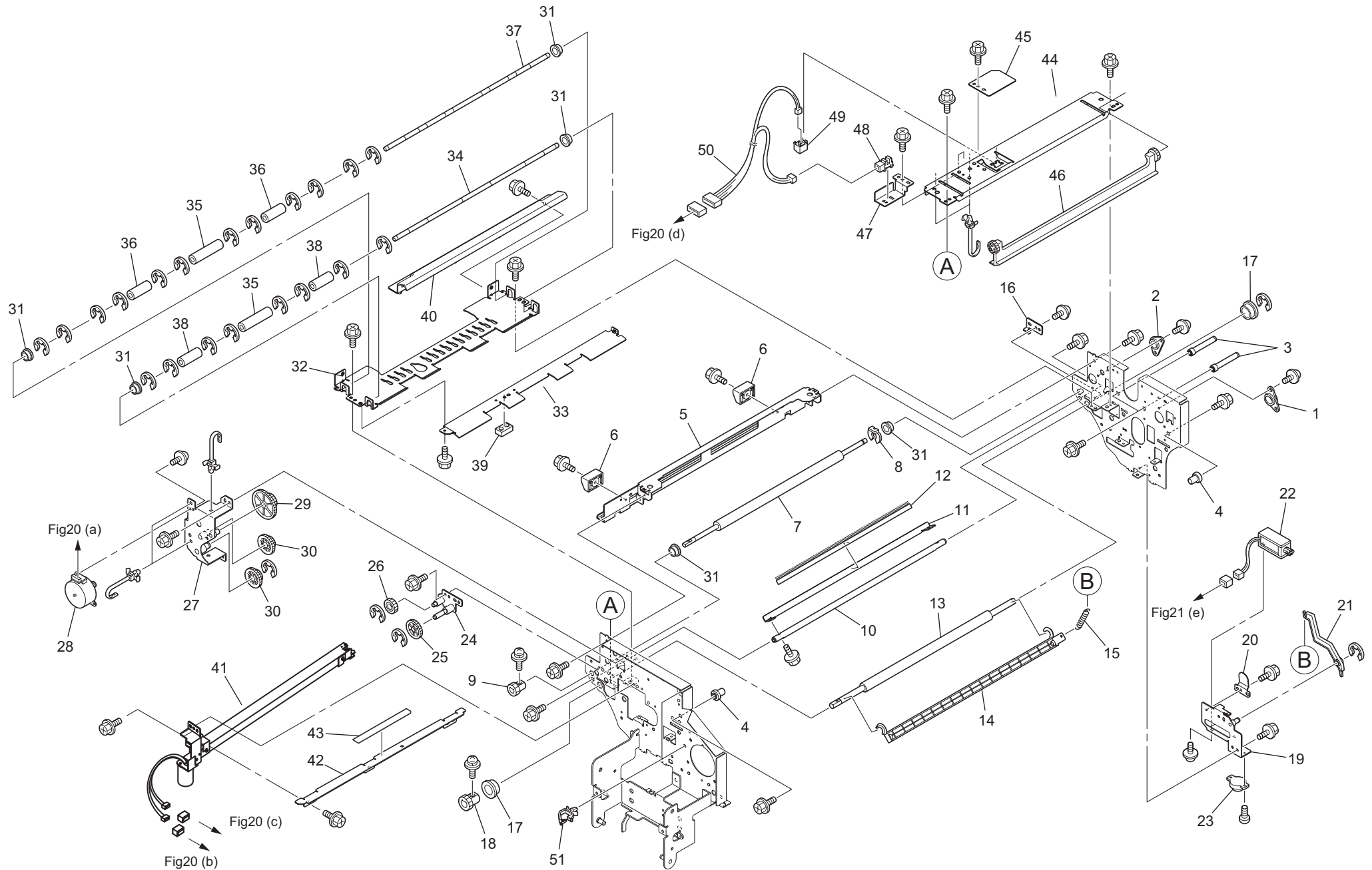
No.	Part No.	Part Name	Q'ty	Remark
34	607-10006-000	*Metal;F6X8X4;10X1	2	
35	023-28259-101	*M Set Guide Plate B; B4	1	RZ-23x
35	023-28302-104	*M Set Guide Plate B; A4	1	RZ-20x,22x
36	023-28228-109	*Spring B Rear; M Set Guide Plate	1	
37	023-28036-102	*Shaft; M Set Guide Plate	1	
38	023-28115-100	*Spring B Front; M Set Guide Plate	1	
39	023-28229-105	*Stopper Front; M.-M Unit	1	
40	023-28247-103	*Stopper Rear; M.-M Unit	1	
41	023-28396-001	*Bracket; Stopper; M Set Guide Plate	1	
42	023-28397-008	*Shaft; Stopper; M Set Guide Plate	1	
43	023-28398-004	*Stopper; M Set Guide Plate	1	
44	023-28399-000	*Stopper Spring; M Set Guide Plate	1	
45	023-28006-106	*Master Flange; Front	1	
46	444-59006-106	*RF-Tag Reader; Master	1	
47	023-28232-009	*Base Bracket; Stopper; M.-M. Close	1	
48	023-28231-002	*Stopper; M.-M. Close	1	
49	635-17613-101	*Step Screw; D6X1.5; M3X4.5	1	
50	023-28233-005	*Stopper Spring; M.-M Close	1	
51	023-28377-007	*Rear Cover; M.-M. Unit	1	
	023-75138-053	*Master Roll Holder Assy B4(52-64)	1	RZ-23x
	023-75139-050	*Master Roll Holder Assy A4(52-64)		RZ-20x,22x
52	023-28130-001	**Fulcrum Plate; Master Roll Holder	1	
53	023-28131-008	**Shaft; Master Roll Holder	1	
54	023-28132-004	**Lever Shaft; Master Roll Holder	1	
55	023-28374-008	**Master Holder Base; B4	1	RZ-23x
55	023-28375-004	**Master Holder Base; A4	1	RZ-20x,22x
56	023-28133-000	**Lever; Master roll Holder	1	
57	023-28135-003	**Lever Spring; Master Roll Holder	1	
58	023-28134-007	**Hook; Master Roll Holder	1	
59	023-28394-009	**Reinforcement Plate; Master Holder Base	1	
60	023-28136-000	**Guide Spring; Master Holder	1	
61	023-28372-005	**Damper Case; Master Holder	1	
62	610-00022-003	**Damper; 2G50-C-10HG	1	
63	023-28007-005	**Master Flange; Rear	1	

I - 46

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Fig23. Master-Making Area (4)

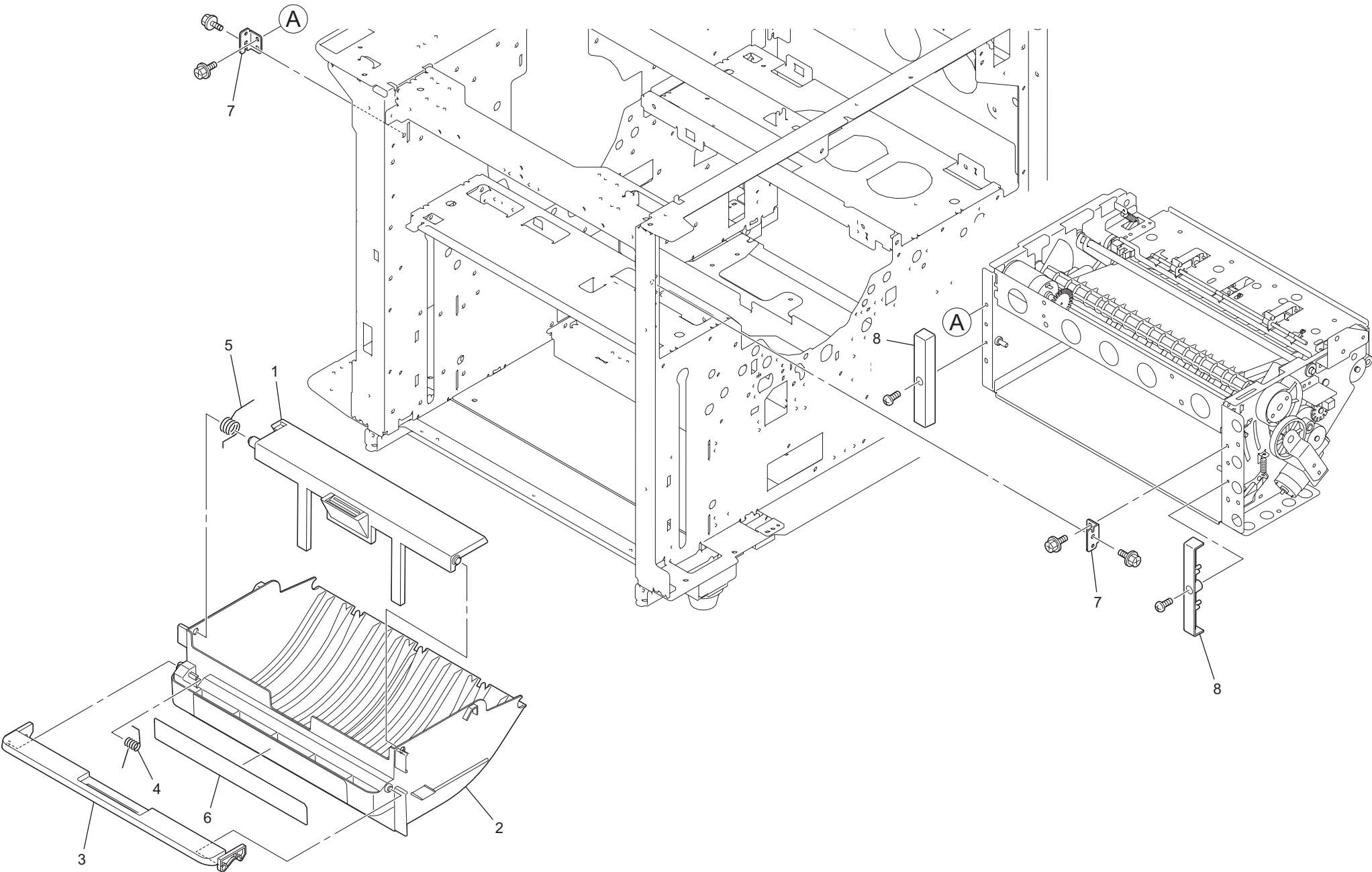
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I - 48

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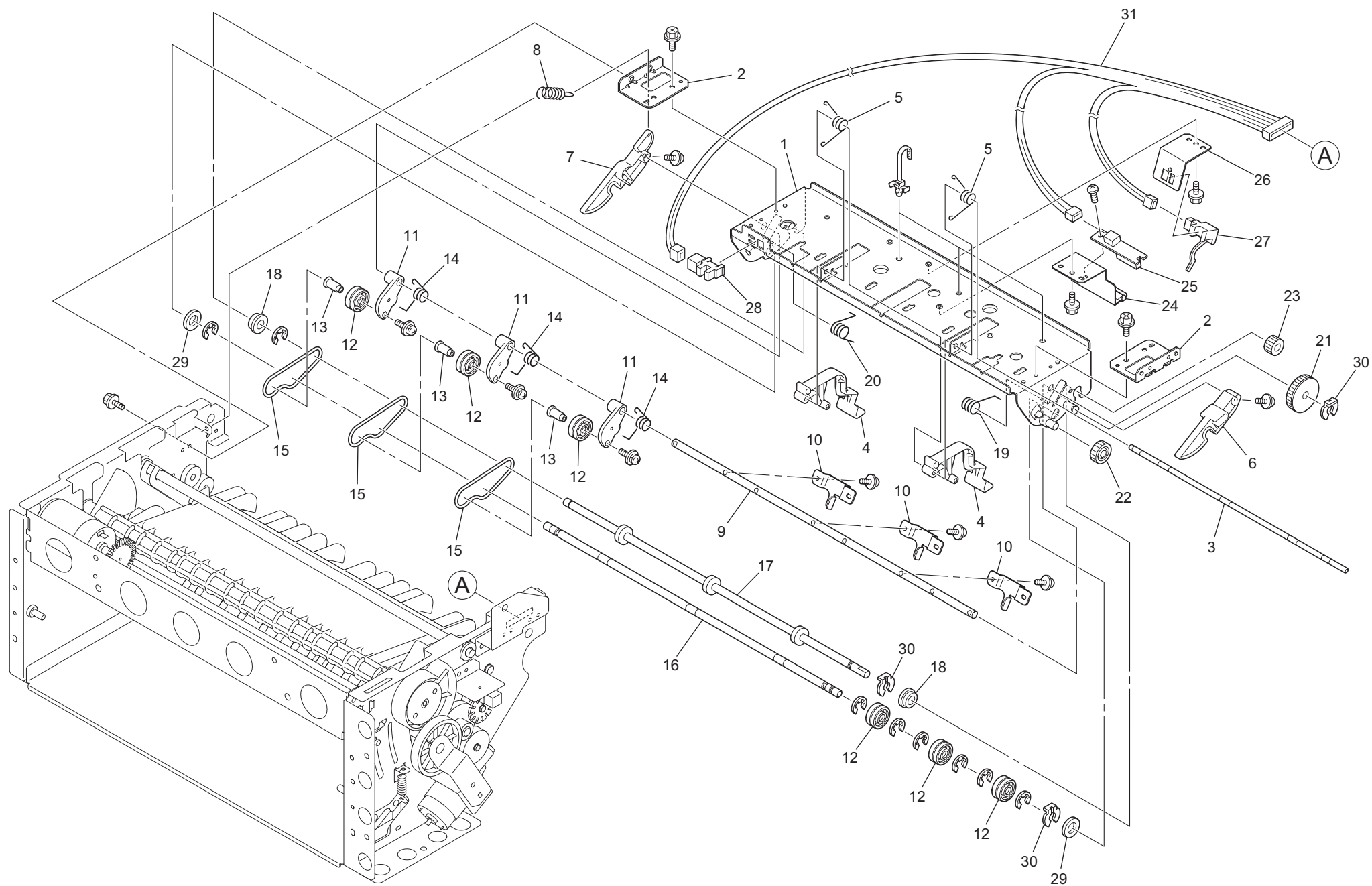
Fig24. Master-Removal Area (1)



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Fig25. Master-Removal Area (2)



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Fig26. Master-Removal Area (3)

I - 53

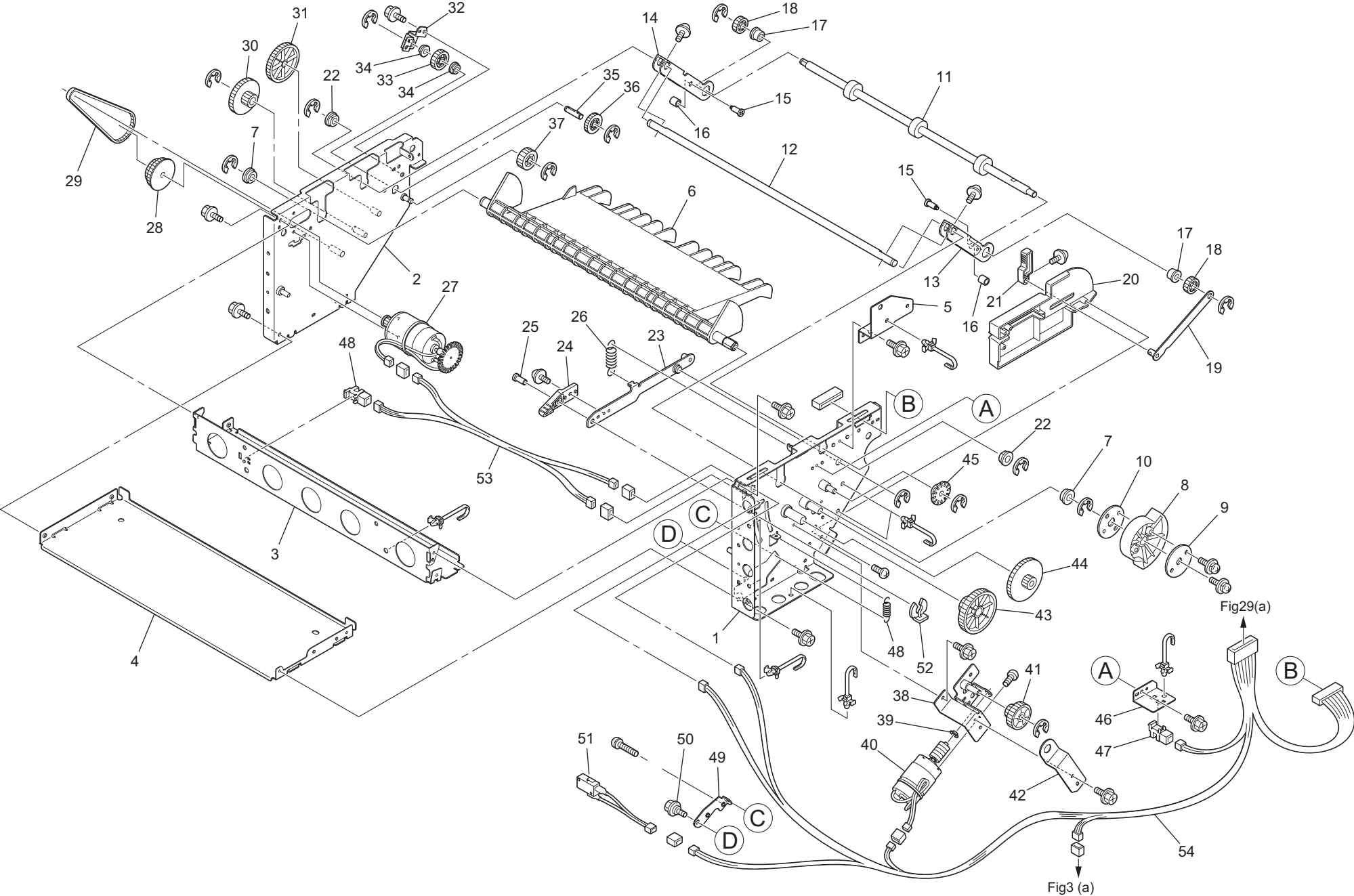


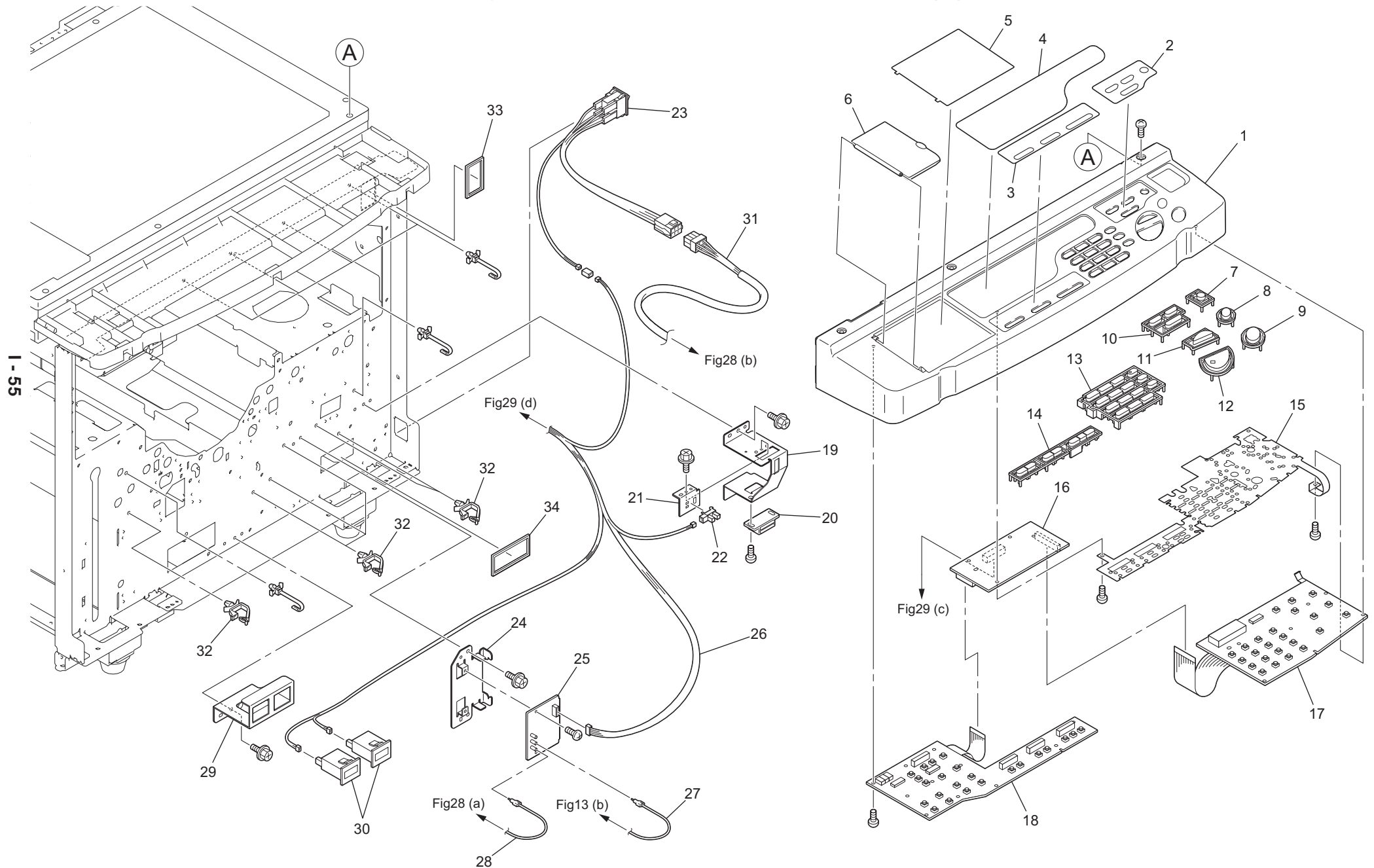
Fig26 Master Removal Area(3)

No.	Part No.	Part Name	Q'ty	Remark
1	023-24002-106	*Side Frame F; M.-Rmv.	1	
2	023-24009-003	*Side Frame R; M.-Rmv.	1	
3	023-24016-107	*Stay A; M.-Rmv.	1	
4	023-24017-006	*Stay B; M.-Rmv.	1	
5	023-24043-007	*Bracket; Master removal unit	1	
6	023-24111-207	*M Compression Plate II	1	
7	607-16001-000	*Metal;F10X15/14X6;18X2	2	
8	612-12701-008	*Gear; M1X71X14	1	
9	030-19242-004	*Bracket A; Compression Gear	1	
10	030-19243-000	*Bracket B; Compression Gear	1	
11	023-24106-009	*Master Removal Roller II	1	
12	023-24124-007	*Hook Shaft; M Removal Roller Lower	1	
13	023-24125-003	*Holding Plate Front; M.-Rmv.	1	
14	023-24127-006	*Holding Plate Rear; M.-Rmv.	1	
15	635-10006-005	*Stepped Screw;F5X10.8;M3X3	2	
16	023-24126-000	*Roller; Hook; M.-Rmv.	2	
17	607-15000-400	*Metal; F8X12/11X10: 15X2	2	
18	612-10004-008	*Gear;M1.25X12X7	2	
19	023-24121-008	*link Plate; M.-Rmv.	1	
20	023-24119-003	*Guide Plate; Disposal Box	1	
21	023-24120-001	*Manual Compression Lever	1	
22	607-15000-000	*Metal; f8X13/12X5;16X2	2	
23	023-24113-005	*Release Lever; M.-Rmv.	1	
24	023-24117-000	*Knob; Release Lever; M.-Rmv.	1	
25	023-24136-005	*Stopper Boss	1	
26	023-24118-007	*Spring; M.-Rmv Release Lever	1	
27	023-74002-050	*Suction Motor;Ccws-55PH	1	
28	613-11300-007	*Pulley Gear; 0.8X31+53S2M	1	
29	621-00001-000	*Belt; 40-S2M-290	1	
30	612-10006-000	*Gear;M0.8X60+M0.8X16	1	
31	612-10005-004	*Gear;M0.8X54	1	
32	023-24133-103	*Bracket; Gear; M.-RMV.	1	
33	612-10018-009	*Gear; M0.8X25	1	
34	607-13000-003	*Metal;F6X10/9X4;12X1.5	2	

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I - 54

Fig27. Electrical Component Area(1)

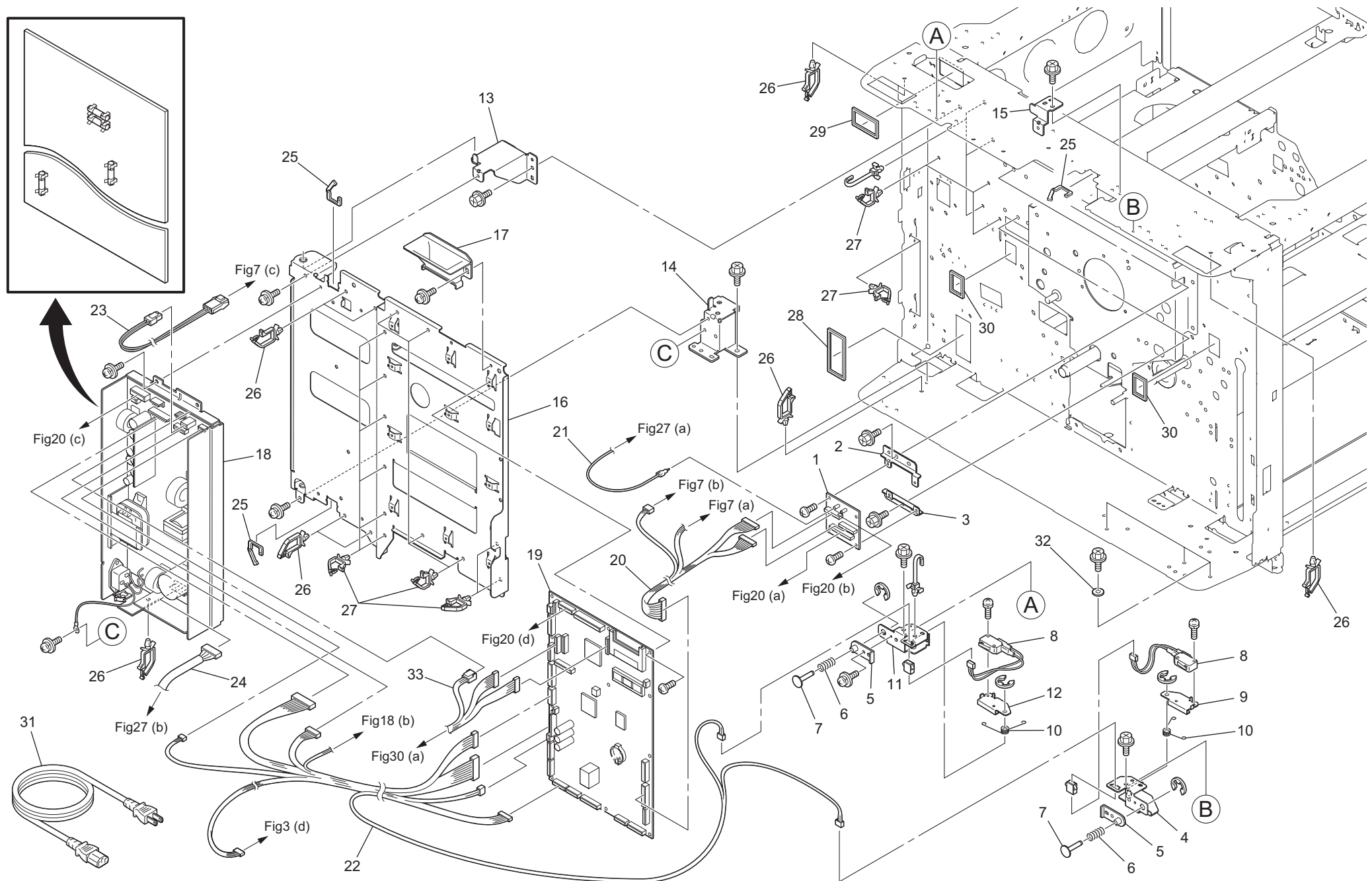


No.	Part No.	Part Name	Q'ty	Remark
	023-75100-056	Panel Unit RZ220UI (1-18)	1	RZ220UI
	023-75111-058	Panel Unit RZ230AW/AN (1-19)	1	RZ230AW/AN
	023-75101-052	Panel Unit RZ200AW (1-20)	1	RZ200AW
	023-75102-059	Panel Unit RZ230C (1-21)	1	RZ230C
	023-75109-053	Panel Unit RZ230EP/UP (1-22)	1	RZ230EP/UP
	023-75110-051	Panel Unit RZ200EP (1-23)	1	RZ200EP
1	023-37002-105	*Frame; Panel	1	
2	023-37061-004	*Sheet ; Panel Mode Key Pic	1	EP,UP
2	023-37062-000	*Sheet ; Panel Mode Key Ch	1	C,CN
2	023-37015-002	*Sheet ; Panel Mode Key Eng	1	UI,AW,AN
3	023-37071-107	*Sheet ; Print Control RZ2 Pic/mm	1	EP,UP
3	023-37069-102	*Sheet ; Print Control RZ2 Eng./inch	1	UI
3	023-37070-100	*Sheet ; Print Control RZ2 Eng./mm	1	AW,AN
3	023-37072-103	*Sheet ; Print Control RZ2 Ch/mm	1	C,CN
4	023-37076-001	*Plate ; Main Panel Pic	1	EP,UP
4	023-37077-008	*Plate ; Main Panel Ch	1	C,CN
4	023-37018-001	*Plate ; Main Panel Eng	1	UI,AW,AN
5	023-37091-000	*Sheet ; Sub Panel RZ220UI	1	RZ220UI
5	023-37092-007	*Sheet ; Sub Panel RZ230AW/AN	1	RZ230AW/AN
5	023-37095-006	*Sheet ; Sub Panel RZ200AW	1	RZ200AW
5	023-37094-000	*Sheet ; Sub Panel RZ230C	1	RZ230C
5	023-37093-003	*Sheet ; Sub Panel RZ230EP/UP	1	RZ230EP/UP
5	023-37096-002	*Sheet ; Sub Panel RZ200EP	1	RZ200EP
6	023-37013-000	*Cover; Sub-Panel	1	
7	023-37056-000	*Wake-Up Key	1	
8	023-37047-001	*Reset Key; Pic.	1	
9	023-37037-006	*Stop Key; Pic.	1	
10	023-37050-100	*Print Mode Key	1	
11	023-37042-000	*Test Print Key; Pic.	1	
12	023-37032-004	*Start Key; Pic.	1	
13	023-37040-007	*Numeric Key	1	
14	023-37051-009	*Print Control Key; RZ3	1	
15	023-37011-104	*Protection Shield	1	
16	023-37021-100	*Lpnl-Ctl PCB	1	

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Fig28. Electrical Component Area (2)

1-57



No.	Part No.	Part Name	Q'ty	Remark
1	023-28218-103	M.-Making Junction PCB	1	
2	023-28204-005	Bracket Upper; Junction PCB; M.-M.	1	
3	023-28221-007	Bracket Lower; Junction PCB; M.-M.	1	
4	023-50044-003	Frame; Drive Interlock SW; P.-F. Side	1	
5	023-50042-000	Shaft Bracket; Drive Interlock SW	2	
6	023-50041-004	Spring; Drive Interlock SW	2	
7	023-50055-005	Button; Drive Interlock SW	2	
8	023-53026-006	Drive Interlock Safety SW	2	
9	023-50052-103	Bracket Pf Side; Drive Interlock SW	1	
10	023-50053-002	Spring; SW Bracket; D Interl SW	2	
11	023-50043-007	Frame; Drive Interlock SW; P.-Rcv. Side	1	
12	023-50051-107	Bracket P-Rcv Side; Drive Interl SW	1	
13	023-50001-002	Hinge Upper; PCB Bracket; Ejection Side	1	
14	023-50002-106	Hinge Lower; PCB Bracket; Ejection Side	1	
15	023-50009-003	Bracket Upper; Power Supply PCB	1	
16	023-50006-101	Bracket; Power Supply & Mech PCB	1	
17	023-50013-000	Guide; Download Card	1	
18	023-50073-003	PS15-N200	1	EP,UP,AW,C,CN
18	023-50033-109	PS15-N100	1	AN,UI
19	023-75056-057	MECHA-CTL PCB; LL; SU	1	
20	023-53021-101	Wire Harness; Paper Ejection Rear LL	1	
21	023-53003-006	Wire Harness; Master Rf-Tag	1	
22	023-53018-100	Wire Harness; FB Upper LL	1	
23	023-53002-000	Wire Harness; Main Power Source	1	
24	023-50032-005	Wire Harness; Main Power SW	1	
25	665-02039-009	Edging Saddle;ESD-17L	3	
26	665-02055-004	Wire Saddle; LWS-2218	8	
27	665-02043-006	Wire Saddle;LWS-1316	17	
28	665-04055-001	SB-6025	1	
29	665-04002-005	Square Bushing	1	
30	665-04054-005	Square Bushing;Sb-2718	2	
31	488-00048-004	Power Cord; 220V EU (L)	1	EP,UP,AWC,CN
31	488-00050-009	Power Cord; 100V (L)	1	AN,UI
32	023-50014-007	Washer F4.5X12X1	3	

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Fig29. Electrical Component Area (3)

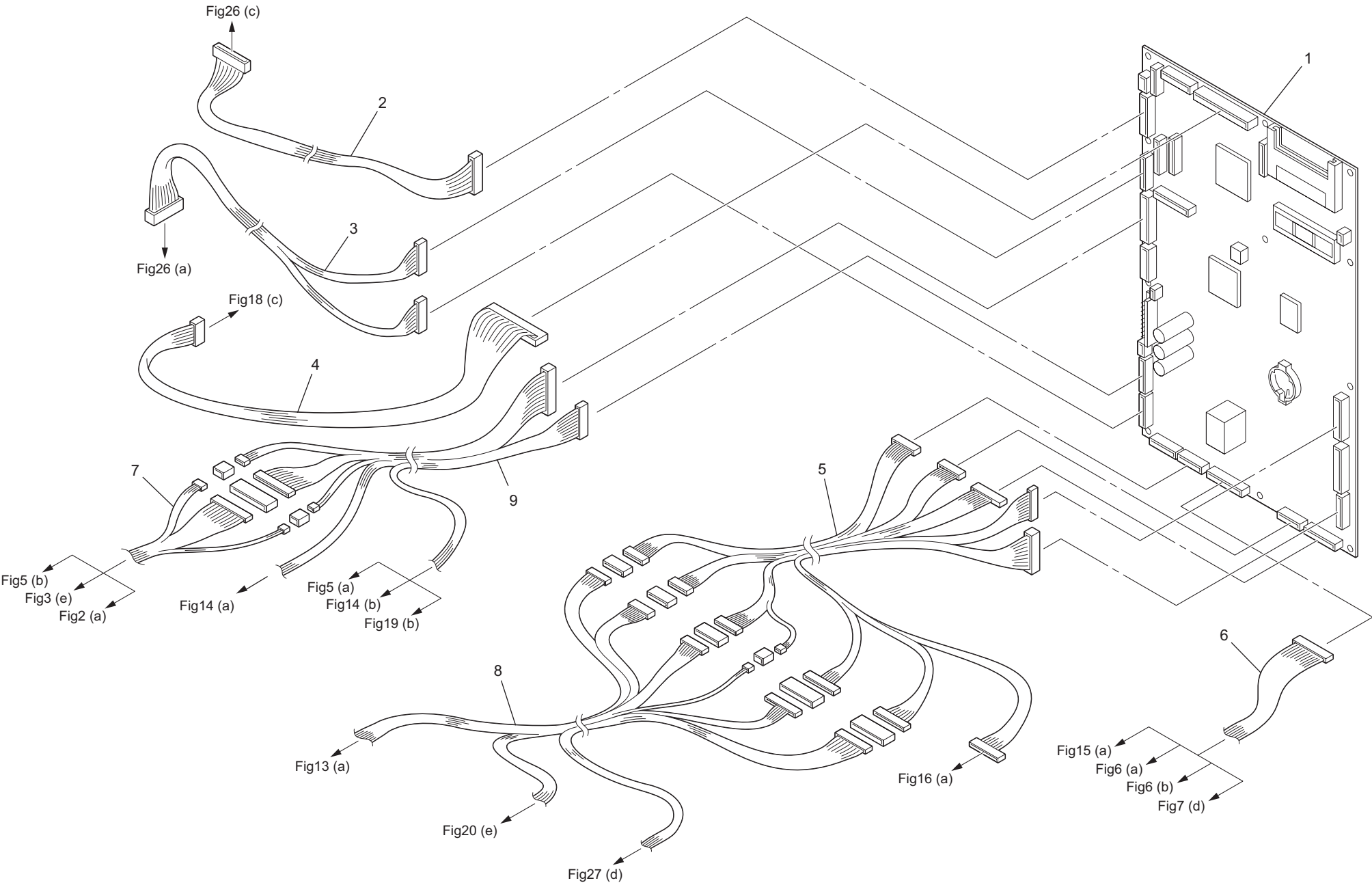


Fig29 Electrical Component Area(3)

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Fig30. Electrical Component Area (4)

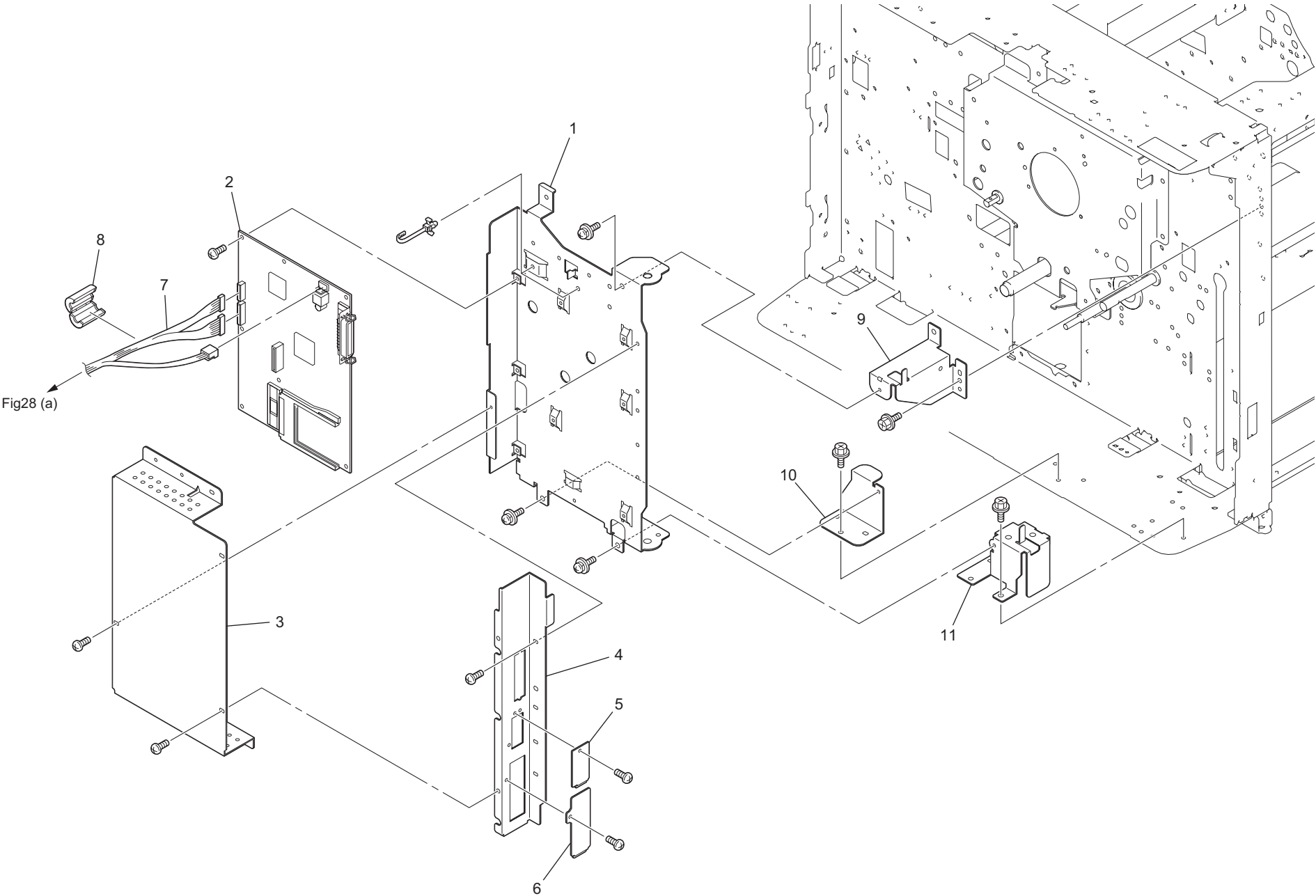
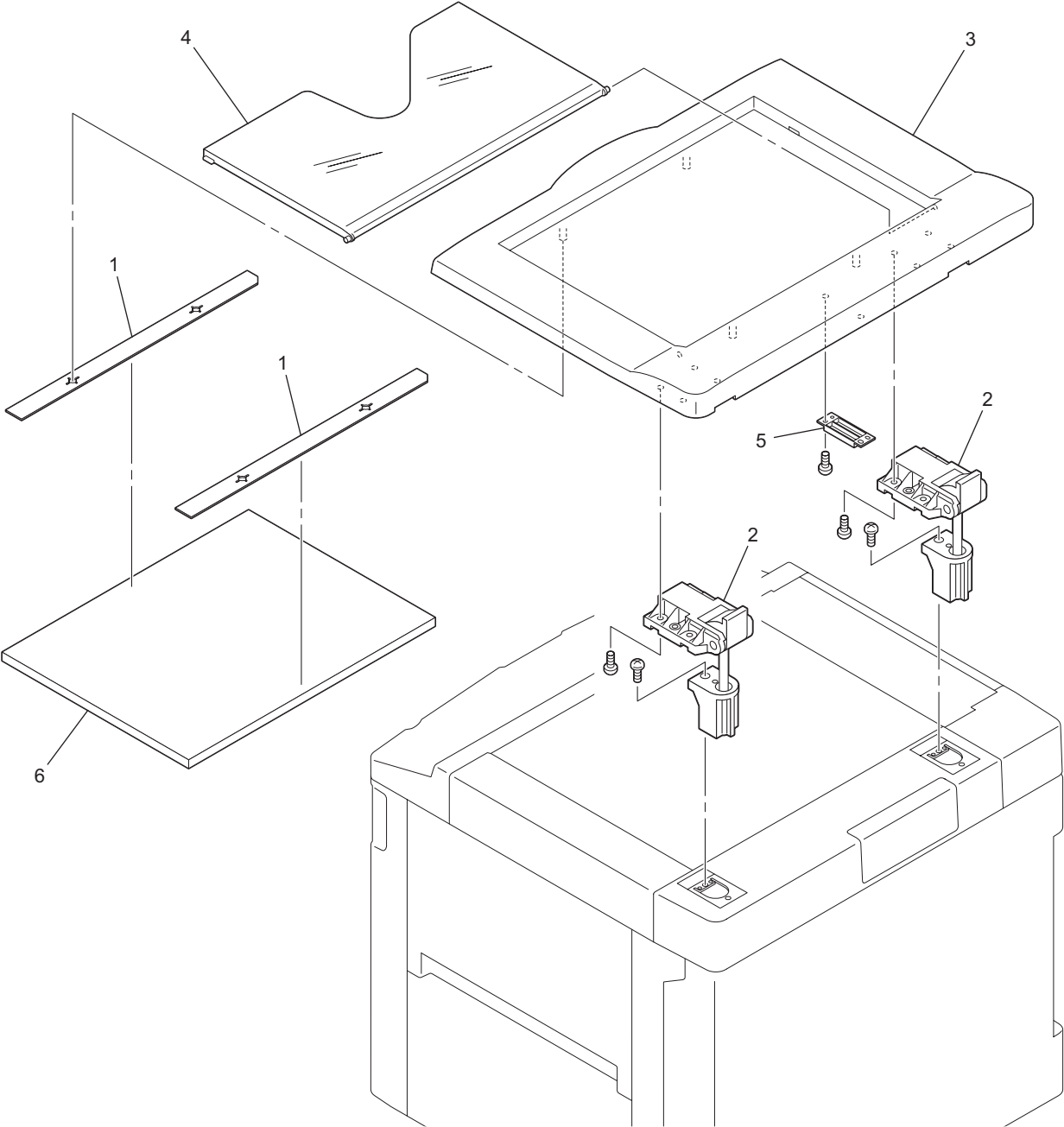


Fig30 Electrical Component Area(4):OPTION

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Fig31. Stage Cover Area



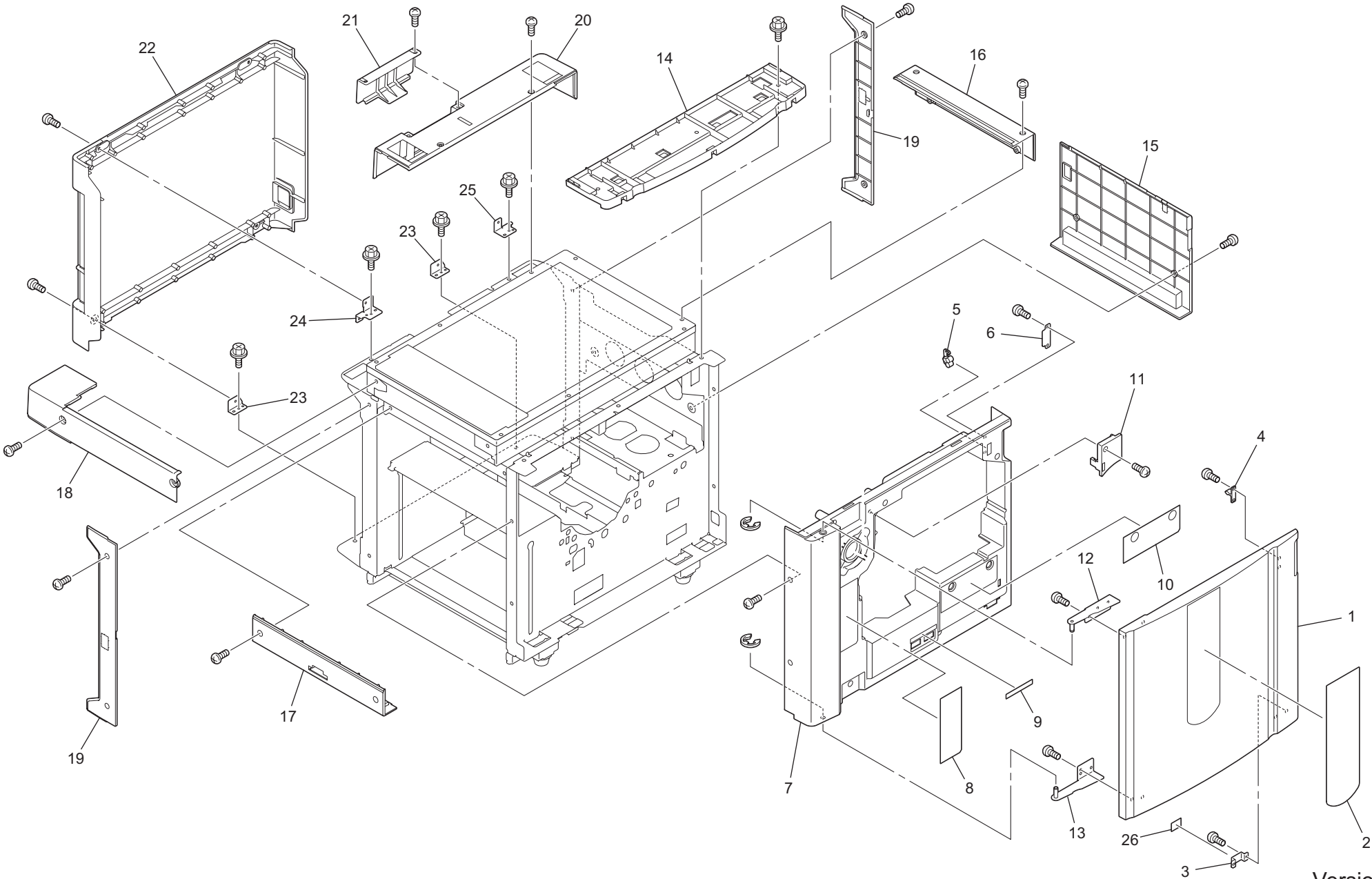
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Fig31 Stage Cover Area

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Fig32. Exterior Cover Area

1 - 65



No.	Part No.	Part Name	Q'ty	Remark
1	023-34005-200	Front Door	1	
2	023-34074-008	Emblem : RZ200AW	1	RZ200AW
2	023-34075-004	Emblem : RZ200EP	1	RZ200EP
2	023-34076-000	Emblem : RZ220AS	1	RZ220AS
2	023-34068-008	Emblem : RZ220UI	1	RZ220UI
2	023-34070-002	Emblem : RZ230AN	1	RZ230AN
2	023-34069-004	Emblem : RZ230AW	1	RZ230AW
2	023-34073-001	Emblem : RZ230C	1	RZ230C
2	023-34071-009	Emblem : RZ230EP	1	RZ230EP
2	023-34072-005	Emblem : RZ230UP	1	RZ230UP
3	021-11220-002	Magnet Catch	1	
4	660-05106-002	Cover Catch	1	
5	660-05105-006	Door Catch	1	
6	021-11140-009	Fixed Plate;Rotary Catch	1	
7	023-34004-107	Front Cover	1	
8	023-17305-004	Ink Replace Instruction Sticker; Pic	1	
9	021-04051-009	Seal; Counter; Pic.	1	
9	021-04050-002	Seal; Counter; Eng.	1	
10	023-28955-000	Seal; M.-M. Unit Release; Pic	1	
10	023-28958-000	Seal; M.-M. Unit Release; Eng	1	
11	023-34015-001	Cover; Master Loading	1	
12	023-34006-002	Hinge Top; Front Door	1	
13	023-34007-009	Hinge Bottom; Front Door	1	
14	023-37014-006	Panel Cover; Bottom	1	
15	023-34030-000	Side Cover; Paper Ejection Side	1	
16	023-34041-100	Cover; Scanner; P.-Rcv. Side	1	
17	023-34032-100	Side Cover; Paper Feeding Side	1	
18	023-34040-103	Cover; Scanner; Paper Feeding Side	1	
19	023-34021-001	Side Cover; Drive Side	2	
20	023-34042-106	Rear Cover; Scanner	1	
21	023-34043-005	Cover; Download Card	1	
22	023-34020-307	Rear Cover	1	
23	023-34024-108	Bracket Lower; Rear Cover	2	
24	023-34025-007	Bracket Left; Scanner Rear Cover	1	

[illegible]

II. INDEX

INDEX

No.	Part No.	Part Name	Q'ty	Remark	
1	011-11514-000	*Gear;Slide Rack;P.-F.-T.	1	19	Fig4
2	014-15011-004	*De-Electricity Bar ; M.-M.; A3	1	22	Fig22
3	015-36317-100	Shaft Screw; Ink Blocking Plate	2	11	Fig12
4	015-36318-000	Spring; Ink Blocking Plate	2	13	Fig12
5	017-13258-004	De-Electricity Brush;Suction	1	20	Fig16
6	018-16411-200	*Original Holder Cover (Upper);Stage Cover	1	4	Fig31
7	018-31614-001	*Ground Spring;Roller System	1	42	Fig8
8	018-33151-106	*Fence Cushion	1	2	Fig17
9	019-11812-106	Lock Ring	2	17	Fig2
10	019-11812-106	*Lock Ring	1	42	Fig21
11	019-11831-100	*Base F;Stripper Pad	1	48	Fig8
12	019-11832-000	*Cover F;Stripper Pad	1	47	Fig8
13	019-11833-006	*Stripper Pad;70	1	49	Fig8
14	019-13511-103	*Arm;Air Pump	1	20	Fig15
15	019-13512-002	*Arm Shaft;Air Pump	1	26	Fig15
16	019-13516-105	*Piston Head II;Air Pump	1	24	Fig15
17	019-13517-004	*Cylinder Valve II ; Air Pump	1	22	Fig15
18	019-13518-000	*Cylinder Valve Sheet ; Air Pump	1	23	Fig15
19	019-15255-007	**Guide Flange;Master Holder	1	64	Fig22
20	019-35025-008	**liner	1	26	Fig22
21	020-11520-009	*L.O. Sheet	1	2	Fig4
22	020-11811-100	Spring B;P.-F.Pressure Adj.	1	23	Fig2
23	020-11813-006	Arm;P.-F.Pressure Adj.	1	22	Fig2
24	020-13114-105	Fixing Pin	2	15	Fig15
25	020-13114-105	Fixing Pin	2	22	Fig16
26	020-13116-205	*P.-E. Pulley; Suction	3	1	Fig16
27	020-65009-202	P.-F.Clutch	1	35	Fig2
28	021-04011-104	*Adj. Seal; P.-F.-T	1	30	Fig4
29	021-04050-002	Seal; Counter; Eng.	1	9	Fig32
30	021-04051-009	Seal; Counter; Pic.	1	9	Fig32
31	021-11140-009	Fixed Plate;Rotary Catch	1	6	Fig32
32	021-11220-002	Magnet Catch	1	3	Fig32
33	021-17129-104	*Spring; Actuator	1	26	Fig18
34	021-51029-003	Push Button SW Ass'Y	2	38	Fig20
35	021-51030-001	Elevator SW Ass'Y	1	8	Fig2
36	023-10003-002	Bottom Stay; Main Frame	2	12	Fgi1
37	023-10004-009	Main Stay; Main Frame	1	8	Fgi1
38	023-10005-005	Stay; Paper Feeding; Main Frame	1	11	Fgi1
39	023-10006-109	Stay; Master Making; Main Frame	1	7	Fgi1
40	023-10007-008	Scanner Stay; Main Frame	2	5	Fgi1
41	023-10008-004	Transportation Support Plate	4	16	Fgi1
42	023-10009-000	Bottom Plate L; Main Frame	1	10	Fgi1
43	023-10010-106	Panel Board; Main Frame	1	4	Fgi1
44	023-10012-001	Upper Stay; Drum	1	6	Fgi1
45	023-10014-004	Lower Stay; Drum	1	9	Fgi1
46	023-10015-000	Support Bracket; FB Scanner	2	3	Fgi1
47	023-10017-003	lifting Handle	4	17	Fgi1
48	023-10018-000	Spacer; Rubber Foot	4	13	Fgi1
49	023-10024-000	Noise Absorber; Bottom; Main Frame	2	15	Fgi1
50	023-10030-000	Stopper; lifting Handle	4	18	Fgi1
51	023-12101-206	*Papar Feed Tray; Upper	1	1	Fig4
52	023-12102-008	*Bottom Frame; P.-F.-T.	1	22	Fig4

INDEX

No.	Part No.	Part Name	Q'ty	Remark	
53	023-12105-007	*Grounding Metal; P.-F.-T.	1	21	Fig4
54	023-12108-006	*Lever; P.-F.-T.	2	14	Fig4
55	023-12109-002	*Link Plate A; P.-F.-T.	2	15	Fig4
56	023-12121-100	*Bracket ; P.-F.-T.	1	26	Fig4
57	023-12123-102	*Adj. NUT; P.-F.-T.	1	24	Fig4
58	023-12125-008	*Connector Cover	1	33	Fig4
59	023-12126-004	*Bracket; Catch	1	4	Fig4
60	023-12127-000	*Slide Rack; P.-F.-T.	2	17	Fig4
61	023-12128-007	*Link Plate B;P.-F.-T.	2	16	Fig4
62	023-12129-003	*Guide Plate; Slide Rack	1	20	Fig4
63	023-12130-001	*Flexible Wire Cover; P.-F.-T.	1	32	Fig4
64	023-12132-004	*Shaft; P.-F. Tray	1	23	Fig4
65	023-12133-000	*Adjuster Dial; P.-F.-T.	1	25	Fig4
66	023-12138-002	Holder; Flexible Wire; P.-F.-T.	1	37	Fig4
67	023-12139-106	*Side Guide F; P.-F.-T	1	11	Fig4
68	023-12140-104	*Side Guide R; P.-F.-T	1	12	Fig4
69	023-12145-009	*Ground Plate; Side Guide; P.-F.-T	1	18	Fig4
70	023-12147-001	*Seal; Setting Instruction; P.-F.-T	1	13	Fig4
71	023-12150-002	*Seal; Closing Tray Instruction; P.-F.-T	1	3	Fig4
72	023-12155-209	*Bracket ; Hinge Cover	1	27	Fig4
73	023-12201-006	Elevator Rack; P.-F.	2	6	Fig3
74	023-12202-002	Spring; Elevator	2	15	Fig3
75	023-12203-009	Bracket; Elevator Spring; P.-F.	2	16	Fig3
76	023-12205-001	Lower limit Frame; P.-F.	1	7	Fig3
77	023-12206-008	Support; Lower limit Frame; P.-F.	1	8	Fig3
78	023-12207-403	Side Frame R; Elevator	1	1	Fig3
79	023-12214-000	Elevator Shaft Ass'Y	1	4	Fig3
80	023-12216-500	Side Frame F; Elevator	1	2	Fig3
81	023-12223-000	*Gear Cover; Elevator Motor	1	23	Fig3
82	023-12231-002	Hook Rear; Elevator Spring	1	17	Fig3
83	023-12232-106	Reinforcement Plate; Elevator	1	5	Fig3
84	023-12233-102	Bracket; Lower limit Sensor	1	13	Fig3
85	023-12234-001	*Motor Chassis; Elevator Motor	1	22	Fig3
86	023-12237-000	Spring; Elevator Safety SW; Lower	2	11	Fig3
87	023-12238-007	Guide; Flexible Wire; P.-F.	1	18	Fig3
88	023-12241-105	*Shaft; Potentiometer Gear	1	8	Fig4
89	023-12244-007	*Elevator Motor Collar	2	28	Fig3
90	023-12247-006	*Cover; Elevator Motor	1	21	Fig3
91	023-12251-003	Bracket F; Spring; Lower Safety SW	1	9	Fig3
92	023-12252-000	Bracket R; Spring; Lower Safety SW	1	10	Fig3
93	023-12257-001	Bracket; Paper Feed Junction PCB	1	32	Fig3
94	023-12261-009	Absorber Gear II; P.-F.	1	3	Fig3
95	023-12305-006	Pick-Up Roller; RZ(15-16)	2		Fig2
96	023-12306-002	*Core:Pick-up Roller	2	16	Fig2
97	023-12310-000	Stay; Paper Feed	1	21	Fig2
98	023-12312-100	P.-F.Pressure Adj.Lever	1	24	Fig2
99	023-12313-009	Spring; Pf Pressure Adj. Lever	1	25	Fig2
100	023-12314-005	Bracket A; Upper limit Sensor	1	26	Fig2
101	023-12315-001	E Swtch Plate	1	6	Fig2
102	023-12316-008	Cover; P-Feed	1	1	Fig2
103	023-12319-007	Upper Guard	2	4	Fig2
104	023-12325-007	Bracket;Upper limit Sensor	1	30	Fig2

INDEX

No.	Part No.	Part Name	Q'ty	Remark	
105	023-12328-103	Support; Pick-Up Roller Shaft	1	14	Fig2
106	023-12329-002	Shaft; Pick-Up Roller	1	11	Fig2
107	023-12330-000	Scraper Shaft; Pickup	1	18	Fig2
108	023-12333-204	Frame Bracket; Pick-Up	1	10	Fig2
109	023-12334-006	Actuator; Upper limit; Std; P.-F.-T	1	20	Fig2
110	023-12344-001	Spring; Elevator Safety SW; Upper	1	7	Fig2
111	023-12402-109	*Bracket; Stripper Base	1	44	Fig8
112	023-12403-008	*Spring Tension; Stripper	1	36	Fig8
113	023-12404-209	*Shaft; Stripper RZ-L	1	46	Fig8
114	023-12408-204	*Housing; Stripper RZ-L	1	45	Fig8
115	023-12409-200	*Worm Gear Box; Stripper Unit	1	52	Fig8
116	023-12412-007	*Arm; Stripper pressure	1	43	Fig8
117	023-12425-109	*Stripper Support; RZ-L	1	37	Fig8
118	023-12427-101	*Bracket; Hook; Stripper Pressure	1	51	Fig8
119	023-12428-000	*Lock Lever; Stripper Unit	1	41	Fig8
120	023-12429-104	*Spring; Angle Adj.; Stripper	1	35	Fig8
121	023-12430-005	*Unfix Lever; Stripper Unit	1	39	Fig8
122	023-12431-001	*Guide Block Front; Stripper Unit	1	38	Fig8
123	023-12501-000	*Timing Roller	1	10	Fig8
124	023-12503-002	*Bearing; Timing Roller	1	11	Fig8
125	023-12507-105	Adj. Plate; Timing Roller	1	14	Fig8
126	023-12510-009	Collar; Load Spring	1	18	Fig8
127	023-12511-005	*Guide Roller	1	20	Fig8
128	023-12512-001	*Shaft; Guide Roller	1	27	Fig8
129	023-12513-008	*Pressure Shaft; Guide Roller	1	26	Fig8
130	023-12514-004	*Pressure Plate; Guide Roller	1	28	Fig8
131	023-12515-000	*Support F; Guide Roller	1	21	Fig8
132	023-12516-007	*Support R; Guide Roller	1	25	Fig8
133	023-12519-006	*Lock Plate; Guide Roller	1	24	Fig8
134	023-12531-103	*Guide Plate (Lower)	1	32	Fig8
135	023-12533-203	*Guide Plate (Upper)	1	33	Fig8
136	023-12536-105	Stay; Guide Plate	2	22	Fgi1
137	023-12537-004	Stay Holder; Guide Plate	2	29	Fig8
138	023-12541-001	Lower Cover; Guide Plate	1	21	Fgi1
139	023-12542-105	Cover; Guide Roller	1	19	Fgi1
140	023-12543-004	Back Cover; Stripper Unit	1	34	Fig8
141	023-12544-000	Noise Absorber; Guide Roller Cover	1	20	Fgi1
142	023-12545-007	*Adj. Plate; Guide Roller	1	22	Fig8
143	023-12600-008	*Wire Harness; P.-F. Tray Inner	1	6	Fig4
144	023-12601-004	Wire Harness; P.-F. Tray Relay	1	35	Fig3
145	023-12601-004	Wire Harness; P.-F. Tray Relay	1	36	Fig4
146	023-12602-108	Wire Harness; Elevator Motor	1	31	Fig3
147	023-12603-007	Wire Harness; 1St Paper Feed	1	39	Fig2
148	023-12604-100	*Junction PCB; P.-F. Tray	1	5	Fig4
149	023-12605-000	*Potentiometer; P.-F.-T	1	7	Fig4
150	023-12606-006	*Wire Harness; Paper Sensor Relay	1	31	Fig8
151	023-12607-002	Wire Harness; 1St Paper Feed LL	1	32	Fig2
152	023-15001-008	Bearing; Main Shaft	1	1	Fgi7
153	023-15002-004	*Main Shaft; Drive	1	10	Fgi7
154	023-15003-000	*Shaft Joint; Drive	1	9	Fgi7
155	023-15006-107	Tensioner Lever; Main Belt	1	5	Fgi7
156	023-15012-000	Bracket; Pressure Shaft	1	4	Fgi7

INDEX

No.	Part No.	Part Name	Q'ty	Remark	
157	023-15019-004	Noise Reduction; Pressure Spring	1	4	Fgi6
158	023-15020-002	*Base Bracket; Pressure Solenoid	1	26	Fgi7
159	023-15034-003	*Print Positioning Base	1	1	Fgi5
160	023-15035-000	Pressure Spring LL	1	3	Fgi6
161	023-15037-002	Lever Ass'Y; Separator	1	30	Fgi7
162	023-15038-009	Spring; Separator	1	31	Fgi7
163	023-15041-204	Bracket; 1St TransMission	1	13	Fgi6
164	023-15046-001	*Actuator; B position sensor	1	14	Fgi7
165	023-15047-105	*Bracket; Main Motor	1	22	Fgi7
166	023-15055-000	*Sector Cam	1	13	Fgi5
167	023-15056-104	*Timing Cam	1	12	Fgi5
168	023-15058-107	Lever Plate; Sector Gear	1	9	Fgi6
169	023-15059-006	Sector Gear	1	10	Fgi6
170	023-15060-101	Spring; Sector Gear	1	11	Fgi6
171	023-15061-000	Guide Roller Lever	1	8	Fgi6
172	023-15062-007	Bracket Base; Guide Roller Shaft	1	5	Fgi6
173	023-15063-100	Spring; Guide Roller Release	1	7	Fgi6
174	023-15068-005	*Sector Gear; Ver. Print Position	1	8	Fgi5
175	023-15070-000	*Idler Spring; Vertical	1	14	Fgi5
176	023-15072-002	Cover Stay; Paper Feed Drive	1	23	Fgi5
177	023-15078-000	*Bracket; Timing Roller	1	3	Fgi5
178	023-15080-005	Shaft; P.-F. Clutch	1	36	Fig2
179	023-15083-004	Bracket; Clutch; Pick-Up Roller	1	33	Fig2
180	023-15089-002	*Joint Collar; Drive	1	8	Fgi7
181	023-15098-001	*Gear Base Block; Vertical Gear	1	11	Fgi5
182	023-15103-005	*Cover; Ver. Print pos. Planet Gear	1	9	Fgi5
183	023-15104-109	*Arm Front; Ver. Print Pos.	1	4	Fgi5
184	023-15105-008	*Arm Rear; Ver. Print Pos.	1	6	Fgi5
185	023-15108-201	Main Cover; Drive	1	2	Fgi7
186	023-15115-003	*Cover; Paper Feed Drive	1	2	Fgi5
187	023-15116-000	*Bracket; Vertical Centering Sensor	1	18	Fgi5
188	023-15117-006	Bracket; Ver. Print Pos. Base	1	22	Fgi5
189	023-15121-003	*Main Gear; Drive	1	11	Fgi7
190	023-15123-006	*Spring; Pressure Solenoid	1	29	Fgi7
191	023-15124-100	Plate ; Pressure Spring	1	2	Fgi6
192	023-15128-008	*Pressure Cam; A4	1	13	Fgi7
193	023-15129-004	*Pressure Cam; B4	1	13	Fgi7
194	023-15136-108	Pressure Lever Ass'Y; Spring	1	20	Fgi7
195	023-15140-105	Pressure Lever Ass'Y; Cam	1	18	Fgi7
196	023-15145-000	Spring; Cam Follower	1	19	Fgi7
197	023-15150-003	Bracket; B Position Sensor	1	15	Fgi7
198	023-15154-203	Base Bracket; Guide Roller Release	1	6	Fgi6
199	023-15155-102	Hook Bracket; Spring; Sector Gear	1	12	Fgi6
200	023-17003-008	Hanger Plate; Screen	1	4	Fig10
201	023-17004-209	light Absorber Strip(328X20)	1	3	Fig10
202	023-17006-007	Drum Flange Rear	1	14	Fig10
203	023-17007-003	Drum Seal	2	7	Fig10
204	023-17008-107	Drum Shaft Joint	1	18	Fig10
205	023-17009-006	Flange Gear; Drum	1	13	Fig10
206	023-17010-004	Boss; A Position Compensation	1	19	Fig10
207	023-17011-000	Weight Balance R; A	1	15	Fig10
208	023-17012-007	Flange Front	1	8	Fig10

INDEX

No.	Part No.	Part Name	Q'ty	Remark	
209	023-17014-000	Weight Balance F; A	1	9	Fig10
210	023-17018-005	Center Shaft; Drum	1	7	Fig12
211	023-17024-005	*Cartridge Guide; Upper	1	15	Fig11
212	023-17025-001	Bottle Stay	1	1	Fig11
213	023-17026-105	*Bottle Set SW Ass'y	1	10	Fig11
214	023-17027-004	Cam; Squeegee Gap	2	4	Fig12
215	023-17040-000	*Block R; Squeegee	1	28	Fig12
216	023-17040-000	*Block R; Squeegee	1	28	Fig12
217	023-17041-007	*Block F; Squeegee	1	19	Fig12
218	023-17041-007	*Block F; Squeegee	1	19	Fig12
219	023-17044-103	Drum Frame Rear	1	25	Fgi9
220	023-17045-002	Slide Shaft	2	2	Fgi9
221	023-17046-106	Side Frame; Drum	2	23	Fgi9
222	023-17048-001	Drum Frame Front	1	1	Fgi9
223	023-17054-001	Lock Spring; B Pos.	1	22	Fgi9
224	023-17060-206	Bridge; Drum Rail	1	6	Fig13
225	023-17061-105	Drum Support Right; Rail	1	3	Fig13
226	023-17062-101	Drum Support Left; Rail	1	2	Fig13
227	023-17063-000	Slide Rail	2	1	Fig13
228	023-17063-000	Slide Rail	1	13	Fig20
229	023-17067-103	*Clamp Plate Base	1	20	Fig10
230	023-17068-002	*Clamp Plate	1	24	Fig10
231	023-17069-009	*Collar D12; Clamp	2	26	Fig10
232	023-17071-100	*Projection Plate	1	28	Fig10
233	023-17073-006	*Spring; Projection Plate	1	29	Fig10
234	023-17082-005	*Spring; Drum Lock	1	14	Fig13
235	023-17087-201	*Drum Lock Base	1	10	Fig13
236	023-17091-101	Cover; Front Frame; Drum	1	28	Fgi9
237	023-17092-000	Drum Guide	4	24	Fgi9
238	023-17094-003	Liner Pom; Rear Frame; Drum	1	27	Fgi9
239	023-17095-000	Drum Lever	1	4	Fgi9
240	023-17116-007	Flange Support Roller; Drum	3	2	Fig12
241	023-17125-006	*Side Frame R;Squeegee	1	27	Fig12
242	023-17125-006	*Side Frame R;Squeegee	1	27	Fig12
243	023-17126-002	*Side Frame F;Squeegee	1	22	Fig12
244	023-17126-002	*Side Frame F;Squeegee	1	22	Fig12
245	023-17131-200	*Drum Solenoid Lever	1	13	Fig13
246	023-17132-002	*Shaft; Drum Solenoid Lever	1	12	Fig13
247	023-17133-106	Bracket; Drawer Connector; Drum	1	20	Fig13
248	023-17135-109	Drum Handle Cover	1	5	Fgi9
249	023-17136-008	Plate; Drum Lock	1	10	Fgi9
250	023-17138-108	Shaft; Drum Lock Plate	1	7	Fgi9
251	023-17139-104	Pre-Pressure Spring; Right; Drum	2	5	Fig13
252	023-17139-104	Pre-Pressure Spring; Right; Drum	2	15	Fig20
253	023-17140-102	Pre-Pressure Spring; Left; Drum	2	4	Fig13
254	023-17140-102	Pre-Pressure Spring; Left; Drum	2	17	Fig20
255	023-17144-000	Spring; Drawer Connector	2	16	Fgi9
256	023-17145-007	Ink Pump Ass'y(18-22)	1	17	Fig11
257	023-17149-002	Flange Handle	1	11	Fig10
258	023-17154-103	Bracket; Drum Lock	1	6	Fgi9
259	023-17155-002	*Cartridge Guide; Lower	1	6	Fig11
260	023-17156-009	*Holder; Rf-Tag Reader; Drum	1	14	Fig11

INDEX

No.	Part No.	Part Name	Q'ty	Remark	
261	023-17157-102	*Bottle Catch	1	9	Fig11
262	023-17158-001	*Bracket; Ink Bottle Set SW	1	8	Fig11
263	023-17159-407	B Pos. Lock Lever	1	19	Fgi9
264	023-17160-006	*Maintenance Cap	1	7	Fig11
265	023-17161-002	link Plate; Drum Lock	1	8	Fgi9
266	023-17162-009	link Shaft; Drum Lock	1	9	Fgi9
267	023-17164-109	*Bracket; Drum Lock Sensor	1	18	Fig13
268	023-17166-101	B Position Lock Release Guide	1	23	Fig13
269	023-17171-008	Drawer Connector Ass'Y; Drum	1	15	Fgi9
270	023-17172-004	Wire Harness; Drum U Inner	1	22	Fig11
271	023-17175-003	Bracket; Drum-PCB	1	13	Fgi9
272	023-17176-000	Cover; Rear Handle	1	26	Fgi9
273	023-17177-006	Spring; Drum Lock link	1	12	Fgi9
274	023-17178-100	Drum PCB	1	14	Fgi9
275	023-17180-007	*Friction Sheet	1	22	Fig10
276	023-17181-100	*Clamp Magnet	1	21	Fig10
277	023-17187-001	*Master Release Arm; Clamp	1	30	Fig10
278	023-17190-100	Ink Blocking Sheet; A4	1	5	Fig10
279	023-17191-106	*Release Lever; Clamp Plate	1	25	Fig10
280	023-17192-005	Stay; Drum Frame Front	2	18	Fgi9
281	023-17197-007	Lock Ring 4	3	3	Fig12
282	023-17197-007	*Lock Ring 4	1	8	Fig23
283	023-17197-007	*Lock Ring 4	3	30	Fig25
284	023-17197-007	*Lock Ring 4	1	52	Fig26
285	023-17203-201	Right Guide; Drum Frame Front	1	7	Fig13
286	023-17204-208	Left Guide; Drum Frame Front	1	8	Fig13
287	023-17207-002	Bracket; Drum Lever	2	3	Fgi9
288	023-17209-005	*Squeegee Roller ;A4	1	16	Fig12
289	023-17211-000	*Ink Drive Shaft ; A4	1	18	Fig12
290	023-17212-006	Ink Distributor ;A4	1	2	Fig11
291	023-17213-207	*Support Bracket F ;A4	1	30	Fig12
292	023-17214-106	*Support Bracket R ;A4	1	31	Fig12
293	023-17226-007	Ink Blocking Plate; Rear	1	15	Fig12
294	023-17227-003	Ink Blocking Plate; Front	1	10	Fig12
295	023-17228-000	Base ; Ink Blocking Plate (Rear)	1	14	Fig12
296	023-17229-006	Base ; Ink Blocking Plate (Front)	1	9	Fig12
297	023-17230-004	*Squeegee Roller ; B4	1	16	Fig12
298	023-17234-107	*Support Bracket R ;B4	1	31	Fig12
299	023-17235-200	*Support Bracket F ;B4	1	30	Fig12
300	023-17239-001	*Ink Drive Shaft ; B4	1	18	Fig12
301	023-17242-002	*Plate; Metal; Drive Shaft; Drum	1	32	Fig12
302	023-17242-002	*Plate; Metal; Drive Shaft; Drum	1	32	Fig12
303	023-17244-005	Cover; B Position Lock Lever	1	20	Fgi9
304	023-17246-008	Fixing Plate Drive ;A4	1	5	Fig12
305	023-17248-108	*Arm; RF-Tag Reader holder; Drum	1	12	Fig11
306	023-17249-007	*Shaft; Rf-Tag Reader; Drum	1	11	Fig11
307	023-17250-005	*Spring; Rf-Tag Reader; Drum	1	13	Fig11
308	023-17251-001	*Spring; Clamp Plate Base	2	23	Fig10
309	023-17254-000	Ground Plate; Ink	1	4	Fig11
310	023-17257-000	Seal Tape;B4	1	6	Fig10
311	023-17258-006	Seal Tape;A4	1	6	Fig10
312	023-17261-007	Weight Balance R; B	1	16	Fig10

INDEX

No.	Part No.	Part Name	Q'ty	Remark	
313	023-17262-003	Weight Balance F; B	1	10	Fig10
314	023-17263-000	Metal Stopper; Drum	1	17	Fig10
315	023-17273-005	B Position Lock Chip	1	21	Fgi9
316	023-17275-008	*Spring; Clamp Plate Close	1	27	Fig10
317	023-17278-007	Base Bracket; B Position Lock Release	1	22	Fig13
318	023-17297-109	Screen Ass'Y L	1	2	Fig10
319	023-17301-009	Seal; Setting Cartridge	1	30	Fgi9
320	023-17302-005	Seal; Drum Set Position	2	29	Fgi9
321	023-17302-005	Seal; Drum Set Position	2	9	Fig13
322	023-17305-004	Ink Replace Instruction Sticker; Pic	1	8	Fig32
323	023-17306-000	Seal; Ink Color	1	32	Fgi9
324	023-17307-007	B Position Marking Sticker	1	31	Fgi9
325	023-17307-007	B Position Marking Sticker	1	12	Fig10
326	023-17320-003	Seal; Ink; Black	1	32	Fgi9
327	023-17321-107	Seal; Drum Type	1	33	Fgi9
328	023-17330-106	*Doctor Roller; Assy ;B4	1	17	Fig12
329	023-17331-102	*Doctor Roller Assy ;A4	1	17	Fig12
330	023-17333-008	Spring ; Doctor Roller	2	35	Fig12
331	023-17334-004	*Adj. Plate R; Squeegee Gap	1	23	Fig12
332	023-17334-004	*Adj. Plate R; Squeegee Gap	1	23	Fig12
333	023-17336-007	*Adj. Plate L; Squeegee Gap	1	24	Fig12
334	023-17336-007	*Adj. Plate L; Squeegee Gap	1	24	Fig12
335	023-17341-000	*Collor ; Ink Drive Shaft	2	33	Fig12
336	023-17341-000	*Collor ; Ink Drive Shaft	2	33	Fig12
337	023-17342-007	Sheet ; Clump Plate Base	2	33	Fig10
338	023-17344-107	light Absorber Strip(65X18)	2	32	Fig10
339	023-17400-007	Guide ; Front Cover	1	27	Fig13
340	023-17403-006	Adj. Plate ; Drum Lock	1	34	Fgi9
341	023-17409-306	Ink Blocking Sheet ; B4 LL	1	5	Fig10
342	023-17420-202	light Absorber Strip(88X18)	2	32	Fig10
343	023-17421-004	Support Plate A	1	37	Fig12
344	023-17422-000	Support Plate B	1	38	Fig12
345	023-19004-109	*Support Shaft; Pressure	1	4	Fig8
346	023-19007-108	*Pressure Shaft	1	1	Fig8
347	023-19012-004	*Stopper; Pressure Roller	2	3	Fig8
348	023-19013-108	*Paper Guide; Pressure	1	2	Fig8
349	023-21001-001	Release Plate	1	30	Fig15
350	023-21002-008	Separator	1	8	Fig15
351	023-21003-004	Adjustment Plate	1	12	Fig15
352	023-21005-007	Stopper; Separator	1	13	Fig15
353	023-21006-003	Shaft; Separator	1	9	Fig15
354	023-21007-000	Release Lever; Separator	1	10	Fig15
355	023-21009-002	*Adj. Plate; Air blow	1	29	Fig15
356	023-21010-000	*Spring; Adj. Valve; Air Blow	1	28	Fig15
357	023-21011-104	*Adj. Valve; Air blow	1	27	Fig15
358	023-21013-204	*Cylinder Base Bracket; Air pump	1	17	Fig15
359	023-21016-106	Air Hose; Separator	1	6	Fig15
360	023-21017-102	*Base; Separation Fan	1	1	Fig15
361	023-21020-006	*Air Nozzle A4	1	3	Fig15
362	023-21021-002	*Cylinder; Air Pump	1	21	Fig15
363	023-21023-102	*Timing Plate; Air Pump	1	19	Fig15
364	023-21027-000	Spacer; Cylinder Base; Air Pump	1	16	Fig15

INDEX

No.	Part No.	Part Name	Q'ty	Remark	
365	023-21302-001	*Suction Box; Suction	1	13	Fig16
366	023-21304-004	*Face Cover; Suction	1	12	Fig16
367	023-21312-309	*Base Frame;Suction	1	18	Fig16
368	023-21333-004	Fix Wing; R	1	26	Fig16
369	023-21334-000	Fix Wing; F	1	25	Fig16
370	023-21351-100	*Drive Shaft; Suction	1	5	Fig16
371	023-21361-008	*Shaft; Belt Driven Pulley	1	2	Fig16
372	023-21381-106	Cover Plate; Suction	1	19	Fig16
373	023-21384-008	Shield Plate; Knob; Suction	1	27	Fig16
374	023-21391-004	Mount Bracket Front; Suction Unit	1	23	Fig16
375	023-21392-000	Mount Bracket Rear; Suction Unit	1	24	Fig16
376	023-21393-007	*light Absorber Strip(35X28)	1	4	Fig15
377	023-21401-000	*Bracket; Paper Receiving sensor	1	9	Fig16
378	023-21601-106	*Paper Receiving Tray	1	20	Fig17
379	023-21602-200	*Side Frame F; P.-Rcv.-T.	1	18	Fig17
380	023-21603-206	*Side Frame R; P.-Rcv.-T.	1	17	Fig17
381	023-21606-205	*Paper Guide F; P.-Rcv.-T.	1	10	Fig17
382	023-21607-201	*Paper Guide R; P.-Rcv.-T.	1	9	Fig17
383	023-21608-003	*Back Stopper; P.-RCV.-T	1	1	Fig17
384	023-21621-000	*Lever; Paper Guide; P.-Rcv.-T.	3	8	Fig17
385	023-21622-006	Magnet Catch; P.-Rcv.-T.	1	27	Fgi1
386	023-21633-008	*Ground Plate; Slide Rail; P.Rcv.-T.	1	19	Fig17
387	023-21634-004	*Shaft; Fence	3	3	Fig17
388	023-21635-000	*Slide Base; P.Rcv.-T.	3	4	Fig17
389	023-21636-007	*Slide Plate(Upper); P.-Rcv.-T.	3	7	Fig17
390	023-21637-003	*Slide Plate(Lower); P.-Rcv.-T.	3	5	Fig17
391	023-21638-000	*Plate Spring; P.-Rcv.-T	6	6	Fig17
392	023-21639-006	*Slide Rail; Paper Guide; P.-Rcv.-T.	2	15	Fig17
393	023-21640-004	*Slide Rail; Paper Stopper; P.-Rcv.-T.	1	16	Fig17
394	023-21641-108	Support Plate F; P.-Rcv.-T.	1	25	Fgi1
395	023-21642-104	Support Plate R; P.-Rcv.-T.	1	26	Fgi1
396	023-21643-003	Bracket; Magnet Catch; P.-Rcv.-T.	1	35	Fig4
397	023-21643-003	*Bracket; Magnet Catch; P.-RCV.-T.	1	21	Fig17
398	023-21650-000	Paper Guiding Arm F	1	11	Fig17
399	023-21651-006	Paper Guiding Arm R	1	12	Fig17
400	023-21652-002	Shaft ; Paper Guiding Arm	2	13	Fig17
401	023-21653-009	Spring ; Paper guiding Arm	2	14	Fig17
402	023-21701-003	*Wire Harness; Suction Unit	1	17	Fig16
403	023-21703-006	*Wire Harness; Ejection Sensor	1	11	Fig16
404	023-21704-002	*Wire Harness; Separation Fun LL	1	5	Fig15
405	023-21801-008	Seal; Folding Tray Inst.; P.-Rcv.-T.	1	21	Fig16
406	023-24002-106	*Side Frame F; M.-Rmv.	1	1	Fig26
407	023-24009-003	*Side Frame R; M.-Rmv.	1	2	Fig26
408	023-24016-107	*Stay A; M.-Rmv.	1	3	Fig26
409	023-24017-006	*Stay B; M.-Rmv.	1	4	Fig26
410	023-24021-208	*Housing; M.-Rmv.	1	1	Fig25
411	023-24027-001	*Bracket; Loading Sensor	1	24	Fig25
412	023-24036-000	*Cover; Disposal Box	1	1	Fig24
413	023-24043-007	*Bracket; Master removal unit	1	5	Fig26
414	023-24056-001	*Bracket; M.-RMV. Sensor	1	26	Fig25
415	023-24058-004	*Spring A Front; M-Rmv. Roller	1	19	Fig25
416	023-24059-000	*Spring A Rear; M-Rmv Roller	1	20	Fig25

INDEX

No.	Part No.	Part Name	Q'ty	Remark	
417	023-24061-102	*Pulley; M-Rmv	6	12	Fig25
418	023-24062-109	*Plate; M.-Rmv. Pulley	3	11	Fig25
419	023-24063-202	*Shaft; Pulley; M-Rmv	3	13	Fig25
420	023-24067-003	*Spring; Plate Pulley; M-Rmv	3	14	Fig25
421	023-24074-000	*Bracket; FG Sensor; Compression Plate	1	46	Fig26
422	023-24084-005	*Shaft H; Gear	1	35	Fig26
423	023-24091-001	*Bracket; Compressing Motor	1	38	Fig26
424	023-24097-107	*Gear Cover; Compression Plate	1	42	Fig26
425	023-24100-108	*Wire Harness; M-Rmv	1	31	Fig25
426	023-24101-007	*Wire Harness M; M-Rmv Unit	1	53	Fig26
427	023-24102-003	*Wire Harness U; M-Rmv Unit	1	54	Fig26
428	023-24103-000	Cover; M.-Rmv.	2	8	Fig24
429	023-24106-009	*Master Removal Roller II	1	11	Fig26
430	023-24107-005	*Master Removal Roller (Up) II	1	16	Fig25
431	023-24108-001	*Shaft II; Plate Pulley; M-Rmv	1	9	Fig25
432	023-24109-202	*Pulley Shaft II; M.-Rmv	1	17	Fig25
433	023-24110-200	*Disposal Box II	1	2	Fig24
434	023-24111-207	*M Compression Plate II	1	6	Fig26
435	023-24113-005	*Release Lever; M.-Rmv.	1	23	Fig26
436	023-24117-000	*Knob; Release Lever; M.-Rmv.	1	24	Fig26
437	023-24118-007	*Spring; M.-Rmv Release Lever	1	26	Fig26
438	023-24119-003	*Guide Plate; Disposal Box	1	20	Fig26
439	023-24120-001	*Manual Compression Lever	1	21	Fig26
440	023-24121-008	*link Plate; M.-Rmv.	1	19	Fig26
441	023-24124-007	*Hook Shaft; M Removal Roller Lower	1	12	Fig26
442	023-24125-003	*Holding Plate Front; M.-Rmv.	1	13	Fig26
443	023-24126-000	*Roller; Hook; M.-Rmv.	2	16	Fig26
444	023-24127-006	*Holding Plate Rear; M.-Rmv.	1	14	Fig26
445	023-24128-002	*Bracket ; Housing; M.-RMV.	2	2	Fig25
446	023-24129-009	*Holding Plate; Pulley; M.-Rmv.	3	10	Fig25
447	023-24130-007	*Hook F; M-Rmv Roller	1	6	Fig25
448	023-24131-003	*Hook R; M-Rmv Roller	1	7	Fig25
449	023-24132-000	Bracket; M.-Rmv.	2	7	Fig24
450	023-24133-103	*Bracket; Gear; M.-RMV.	1	32	Fig26
451	023-24134-100	*Spring; Safety SW; M-Rmv Unit	1	48	Fig26
452	023-24135-009	*Set Plate; Safety SW; M.-Rmv.	1	49	Fig26
453	023-24136-005	*Stopper Boss	1	25	Fig26
454	023-24137-001	*Spring Hook R; Trans. Roller; M-Rmv	1	8	Fig25
455	023-24140-207	*Box Lever; Disposal box	1	3	Fig24
456	023-24143-001	*Seal; Disposal Instruction; Pic	1	6	Fig24
457	023-24144-008	*Shaft; M-Rmv Guide	1	3	Fig25
458	023-24145-004	*M-Rmv Guide A	2	4	Fig25
459	023-24147-007	*Spring; M-Rmv Guide	2	5	Fig25
460	023-24148-003	*Handle Spring; Disposal Box	1	4	Fig24
461	023-26000-003	*Bracket plate; Clamp drive	1	4	Fig14
462	023-26005-005	*Bracket ;Clamp Sensor	1	9	Fig14
463	023-26018-000	*Wire Harness; Clamp Unit	1	11	Fig14
464	023-28001-007	Bracket Front Upper; Rail; M.-M.	1	14	Fig20
465	023-28002-003	Bracket Rear Upper; Rail; M.-M.	1	16	Fig20
466	023-28003-000	Bracket; Slide Lock; M.-M.	1	33	Fig20
467	023-28006-106	*Master Flange; Front	1	45	Fig22
468	023-28007-005	**Master Flange; Rear	1	63	Fig22

INDEX

No.	Part No.	Part Name	Q'ty	Remark	
469	023-28010-006	Guide Bracket;Wire Harness; M.-M.	1	29	Fig20
470	023-28012-009	Bracket Rear Bottom; Rail; M.-M.	1	20	Fig20
471	023-28013-200	*Bottom Stay; M.-M Unit	1	14	Fig22
472	023-28014-109	*Upper Stay; M.-M Unit	1	5	Fig23
473	023-28015-008	*Box Stay; M.-Making	1	21	Fig22
474	023-28016-004	*Bracket; PCB; M.-Making	1	6	Fig20
475	023-28036-102	*Shaft; M Set Guide Plate	1	37	Fig22
476	023-28044-008	*Shaft; M. Loading Roller	1	10	Fig23
477	023-28051-004	*Guide Plate; Stocker	1	14	Fig23
478	023-28052-000	*Hook Spring; Stoker Guide Plate	1	15	Fig23
479	023-28053-104	*Cover; Master Pos. Sensor	1	45	Fig23
480	023-28070-009	*Handle; M.-M.	1	4	Fig22
481	023-28071-102	*Hook Right; Handle; M.-M.	1	7	Fig22
482	023-28072-001	*Spring; Hook; M-M	2	9	Fig22
483	023-28073-008	*Lower Stay; M.-Making	1	17	Fig22
484	023-28074-101	*Reinforcement Plate; M.-M. Frame	1	16	Fig22
485	023-28076-007	*Shaft; Drawer Connector; M.-M Unit	2	3	Fig23
486	023-28078-000	*Spring; Drawer Connector	2	64	Fig21
487	023-28082-007	*Positioning Pin; Front; M.-M	2	13	Fig22
488	023-28084-000	Bracket Front Bottom; Rail; M.-M.	1	19	Fig20
489	023-28085-006	Bracket; Drawer Connector; M.-M.	1	25	Fig20
490	023-28086-002	Positioning Pin; Rear; M.-M	2	23	Fig20
491	023-28092-207	*Rear Frame; M.-M Unit	1	1	Fig22
492	023-28115-100	*Spring B Front; M Set Guide Plate	1	38	Fig22
493	023-28117-005	Guide Upper; Flexible Wire; M.-M	1	28	Fig20
494	023-28119-008	Cover; M.-M. Unit Safety SW	1	39	Fig20
495	023-28121-002	Hook Stopper; Handle; M.-M.	1	35	Fig20
496	023-28122-106	Shaft; Stopper; M.-M	1	34	Fig20
497	023-28124-109	*Master Roll Holder; Bottom	1	19	Fig22
498	023-28130-001	**Fulcrum Plate; Master Roll Holder	1	52	Fig22
499	023-28131-008	**Shaft; Master Roll Holder	1	53	Fig22
500	023-28132-004	**Lever Shaft; Master Roll Holder	1	54	Fig22
501	023-28133-000	**Lever; Master roll Holder	1	56	Fig22
502	023-28134-007	**Hook; Master Roll Holder	1	58	Fig22
503	023-28135-003	**Lever Spring; Master Roll Holder	1	57	Fig22
504	023-28136-000	**Guide Spring; Master Holder	1	60	Fig22
505	023-28141-003	*Fulcrum Lever; Stoker	1	21	Fig23
506	023-28148-008	*Hook Shaft; M.-M Unit	2	4	Fig23
507	023-28150-207	*Frame; M-M Upper Unit	1	1	Fig21
508	023-28151-106	*Pivot Support Plate Front; M.-M Up	1	14	Fig21
509	023-28152-005	*Spring Hook Bracket Rear; TPH Pressure	1	7	Fig21
510	023-28154-105	*Shaft; M.-M Upper Unit	1	10	Fig21
511	023-28155-004	*Spring Front; M.-M Up	1	13	Fig21
512	023-28156-000	*Spring Rear; M.-M Up	1	8	Fig21
513	023-28157-007	*Shaft; Handle; M-M Up	1	2	Fig21
514	023-28158-100	*Pivot Shaft; TPH	1	23	Fig21
515	023-28159-301	*Pressure Lever Bracket; M.-M Up	2	25	Fig21
516	023-28160-008	*Pressure Release Plate; TPH Press	1	24	Fig21
517	023-28162-000	*Bottom Cover; TPH; M.-M.	1	21	Fig21
518	023-28165-000	*Cam; TPH Pressure	1	45	Fig21
519	023-28166-006	*Shaft; TPH Pressure Cam	1	47	Fig21
520	023-28168-009	*Bracket; TPH pressure motor	1	44	Fig21

INDEX

No.	Part No.	Part Name	Q'ty	Remark	
521	023-28172-006	*Holding Plate; Worm Gear	1	58	Fig21
522	023-28173-100	*TPH Alignment Shaft	1	27	Fig21
523	023-28177-105	*Safety Stopper; M.-M Up	1	15	Fig21
524	023-28190-101	**M Transfer Roller; Wide Width	2	35	Fig23
525	023-28191-108	**M Transfer Roller; Middle width	2	36	Fig23
526	023-28192-104	*M Transfer Roller; Short Width	2	38	Fig23
527	023-28194-107	*Holding Plate R; Stoker Guide Plate.	1	16	Fig23
528	023-28195-006	*Bracket; Write Pulse Motor	1	1	Fig20
529	023-28196-002	*Bracket; Load Pulse Motor	1	27	Fig23
530	023-28199-001	Guide Lower; Flexible Wire; M.-M	1	27	Fig20
531	023-28200-000	Guide Roller; Wire Harness; M.-M.	1	32	Fig20
532	023-28202-002	Bracket; M.-M. Unit Safety SW	1	40	Fig20
533	023-28204-005	Bracket Upper; Junction PCB; M.-M.	1	2	Fig28
534	023-28206-105	*Hook Left; Handle; M.-M.	1	6	Fig22
535	023-28207-004	*Actuator plate; M.-M. Set Sensor	1	8	Fig22
536	023-28209-007	*Spring; Handle; M-M	1	12	Fig22
537	023-28210-005	*Master Guide Roller	2	20	Fig22
538	023-28213-004	*Shaft; Gear; TPH lift Motor	2	51	Fig21
539	023-28214-108	*Bracket; Set sensor; M.-M Upper	1	47	Fig23
540	023-28215-201	*Pushing Plate F; Set-Guide Plate	1	11	Fig21
541	023-28218-103	M.-Making Junction PCB	1	1	Fig28
542	023-28221-007	Bracket Lower; Junction PCB; M.-M.	1	3	Fig28
543	023-28222-003	Front Cover; M.-M. Unit	1	10	Fig20
544	023-28228-109	*Spring B Rear; M Set Guide Plate	1	36	Fig22
545	023-28229-105	*Stopper Front; M.-M Unit	1	39	Fig22
546	023-28231-002	*Stopper; M.-M. Close	1	48	Fig22
547	023-28232-009	*Base Bracket; Stopper; M.-M. Close	1	47	Fig22
548	023-28233-005	*Stopper Spring; M.-M Close	1	50	Fig22
549	023-28236-004	*Hook Lever; M.-M Up	1	3	Fig21
550	023-28237-000	*Hook; M.-M Up	2	4	Fig21
551	023-28238-104	Flexible Wire; M.-M	1	31	Fig20
552	023-28239-208	*Wire Harness; M.-M Unit	1	9	Fig20
553	023-28240-206	*Wire Harness; M.-M Upper Unit	1	59	Fig21
554	023-28242-101	*Wire Harness; M Pos. Sensor	1	50	Fig23
555	023-28244-201	*TPH Drawer Connector U; M.-M Up	1	66	Fig21
556	023-28245-003	*Reinforce Plate; Lower; M.-M. Unit	1	18	Fig22
557	023-28247-103	*Stopper Rear; M.-M Unit	1	40	Fig22
558	023-28250-201	*Master Making PCB	1	8	Fig20
559	023-28251-003	*Slide Guide 2; M.-M.	1	15	Fig22
560	023-28252-107	*Pivot Support Plate Rear; M.-M Up	1	9	Fig21
561	023-28253-103	*Pushing Plate R; Set-Guide Plate	1	6	Fig21
562	023-28254-100	**Plate K-Rear; TPH	1	35	Fig21
563	023-28255-106	**Plate K-Front; TPH	1	36	Fig21
564	023-28256-404	**TPH holder; KB4	1	29	Fig21
565	023-28257-109	**Bracket; TPH Brush; KB4	1	37	Fig21
566	023-28258-008	**Holding roller; KB4	1	39	Fig21
567	023-28259-101	*M Set Guide Plate B; B4	1	35	Fig22
568	023-28262-102	**Write Roller; D13-B4	1	25	Fig22
569	023-28263-001	**Cutter Guide Lower; B4	1	33	Fig23
570	023-28265-004	**Cutter Guide Upper; B4	1	32	Fig23
571	023-28271-004	*Stocker Roller; B4	1	33	Fig22
572	023-28272-000	**Shaft; Stoker roller Upper; B4	1	34	Fig23

INDEX

No.	Part No.	Part Name	Q'ty	Remark	
573	023-28284-009	*Load Roller; B4	1	13	Fig23
574	023-28285-005	*M. Loading Roller; B4	1	7	Fig23
575	023-28286-001	**Shaft; Load Roller Upper; B4	1	37	Fig23
576	023-28287-008	*Master Guide Plate A; (D13)	1	42	Fig23
577	023-28289-000	*Cutter Cover B4	2	44	Fig23
578	023-28302-104	*M Set Guide Plate B; A4	1	35	Fig22
579	023-28304-107	*Collar; Master Holder ;A4	1	67	Fig22
580	023-28328-103	*Gear Cover; M.-M UP	1	60	Fig21
581	023-28336-009	*Handle Stopper; M.-M.	1	10	Fig22
582	023-28338-001	*Shaft; Handle; M-M	1	3	Fig22
583	023-28339-008	Spring; Stopper; M.-M	1	36	Fig20
584	023-28340-006	*Guide; Master Loading	1	40	Fig23
585	023-28341-002	*Bracket Rear; Write Roller	1	31	Fig22
586	023-28342-106	*Bracket Front; Write Roller	1	29	Fig22
587	023-28343-005	*Guide; Handle; M.-M.	1	5	Fig22
588	023-28344-001	*TPH Pressure Spring 23	2	26	Fig21
589	023-28353-000	Holding Plate; Wire Harness; M.-M.	1	30	Fig20
590	023-28356-000	*Hook Spring; M.-M Up	1	5	Fig21
591	023-28357-103	*Collar; Master Holder ;B4	1	67	Fig22
592	023-28358-002	Stopper; M.-M. Unit	1	23	Fgi1
593	023-28361-003	*Pressure Detection Plate; TPH	1	49	Fig21
594	023-28367-001	*Guide Block; M.-M. Unit Mount	2	6	Fig23
595	023-28372-005	**Damper Case; Master Holder	1	61	Fig22
596	023-28374-008	**Master Holder Base; B4	1	55	Fig22
597	023-28375-004	**Master Holder Base; A4	1	55	Fig22
598	023-28376-108	*Bracket; Gear Shaft; M Loading	1	24	Fig23
599	023-28377-007	*Rear Cover; M.-M. Unit	1	51	Fig22
600	023-28378-100	*Support Plate; Rear Frame; M.-M	1	65	Fig22
601	023-28379-000	*Master Set Guide Bar B4	1	46	Fig23
602	023-28380-008	*Pressure Plate; Write Roller	1	32	Fig22
603	023-28380-008	*Pressure Plate; Write Roller	1	20	Fig23
604	023-28381-004	*Bracket Front; TPH Pressure spring	1	12	Fig21
605	023-28382-205	*Bracket; TPH Drawer Connector UP	1	63	Fig21
606	023-28383-007	*Fulcrum Plate; Master Stoker	1	19	Fig23
607	023-28386-006	**Protection Plate; TPH connector KB4	1	32	Fig21
608	023-28387-002	**TPH Pressure Assist Plate; B4	2	30	Fig21
609	023-28394-009	**Reinforcement Plate; Master Holder Base	1	59	Fig22
610	023-28396-001	*Bracket; Stopper; M Set Guide Plate	1	41	Fig22
611	023-28397-008	*Shaft; Stopper; M Set Guide Plate	1	42	Fig22
612	023-28398-004	*Stopper; M Set Guide Plate	1	43	Fig22
613	023-28399-000	*Stopper Spring; M Set Guide Plate	1	44	Fig22
614	023-28401-005	*Bracket Bottom; Master Making PCB	1	7	Fig20
615	023-28402-001	Slide Rail 2	1	18	Fig20
616	023-28403-008	*Spring; Safety SW /Drum&Mm	1	15	Fig13
617	023-28403-008	Spring; Safety SW /Drum&Mm	1	41	Fig20
618	023-28404-004	*Bracket; M.-M. Unit set SW	1	16	Fig13
619	023-28404-004	Bracket; M.-M. Unit Set SW	1	42	Fig20
620	023-28405-108	*Bracket; De-Elect. Brush; M Loading	1	11	Fig23
621	023-28408-000	Protection Plate; Wire Harness; M.-M.	1	24	Fgi1
622	023-28410-004	*De-Electricity Brush ; A3	1	22	Fig21
623	023-28412-104	**TPH Boss	2	31	Fig21
624	023-28414-000	**De-electricity Brush; TPH B4	1	38	Fig21

INDEX

No.	Part No.	Part Name	Q'ty	Remark	
625	023-28415-006	*De-Electricity Brush; M Loading	1	12	Fig23
626	023-28417-009	*Lower Bracket; Master End Sensor	1	23	Fig22
627	023-28419-001	*Upper Bracket B4; Master End Sensor	1	17	Fig21
628	023-28420-000	*Upper Bracket A4; Master End Sensor	1	17	Fig21
629	023-28422-002	*Cutter Unit(Shuttle)	1	41	Fig23
630	023-28423-009	*Seal; TPH; Pic	1	62	Fig21
631	023-28424-005	*Seal; TPH; Eng.	1	62	Fig21
632	023-28426-105	*Seal; Master Making Unit	1	16	Fig21
633	023-28427-004	*Cover; Master End Sensor	1	19	Fig21
634	023-28428-000	Seal; Master Making Unit Cover	1	12	Fig20
635	023-28431-001	*light Absorber Strip(21X15)	1	18	Fig21
636	023-28432-105	**Write Roller Liner 3	1	27	Fig22
637	023-28433-004	*Shaft; Gear 8; TPH lift Motor	1	53	Fig21
638	023-28435-007	*Spring; TPH Alignment Shaft	1	68	Fig21
639	023-28942-103	*Seal; TPH Cleaning; Pic.	1	61	Fig21
640	023-28944-009	Seal;Setting Master;Pic.	1	11	Fig20
641	023-28946-001	*Seal; Pos. Leading Edge Of Master; Pic	1	43	Fig23
642	023-28955-000	Seal; M.-M. Unit Release; Pic	1	10	Fig32
643	023-28958-000	Seal; M.-M. Unit Release; Eng	1	10	Fig32
644	023-30002-002	Hinge Bracket; Flat Bed	2	31	Fig18
645	023-30003-009	Bracket; FB Scanner	6	29	Fig18
646	023-30006-008	*Actuator Plate; Stage cover Actuator	1	5	Fig31
647	023-30007-004	*Frame; Stage Cover	1	3	Fig31
648	023-30008-000	*Stage Cover	2	1	Fig31
649	023-30010-200	*Frame Upper; Scanner	1	12	Fig18
650	023-30011-001	*Frame Lower; Scanner	1	9	Fig19
651	023-30012-008	*Guide Rail 1; Scanner	2	10	Fig19
652	023-30014-000	*Cover Spacer Rear; Scanner	1	22	Fig18
653	023-30015-007	*Cover Spacer Front; Scanner	1	23	Fig18
654	023-30016-003	*Stage Glass	1	20	Fig18
655	023-30017-107	*Original Stopper	1	1	Fig18
656	023-30018-006	*Fixing Plate R; Stage glass	1	18	Fig18
657	023-30019-002	*Fixing Plate F; Stage Glass	1	19	Fig18
658	023-30020-205	*Image Scanner Carriage; B4	1	11	Fig19
659	023-30021-007	*Plate Spring 1; Image Scanner	2	13	Fig19
660	023-30023-000	*Slider ; Carriage	6	17	Fig19
661	023-30025-002	*Wire Holder 1; Scanner	2	21	Fig19
662	023-30026-009	*Wire Holder 2 Rear; Scanner	1	22	Fig19
663	023-30027-005	*Wire Holder 2 Front; Scanner	1	23	Fig19
664	023-30028-001	*Spring ; Carriage	3	8	Fig19
665	023-30030-006	*Holder; Pulley; Scanner	2	29	Fig19
666	023-30032-009	*Shaft; Pulley; Scanner	2	28	Fig19
667	023-30033-102	*Flexible Wire Harness ; CIS	1	14	Fig19
668	023-30034-001	*Junction Wire Harness; Original Detection Sensor	1	5	Fig18
669	023-30036-004	*Holder; Scanner Motor 1	1	4	Fig19
670	023-30039-100	*FLx-PCB	1	9	Fig18
671	023-30040-001	*Hook ; Spring	1	7	Fig19
672	023-30041-008	*Holder; Shaft; Scanner	1	3	Fig19
673	023-30047-006	*Wire R ; Scanner RZ2	1	26	Fig19
674	023-30048-002	*Wire F ; Scanner RZ2	1	25	Fig19
675	023-30051-003	*Shaft ; Wire Pulley	1	24	Fig19
676	023-30055-106	*Adj. Cam ; Scanner	2	18	Fig19

INDEX

No.	Part No.	Part Name	Q'ty	Remark	
677	023-30057-001	*Slider ; CIS-1	4	6	Fig19
678	023-30059-004	*Bracket; HP sensor; Scanner	1	6	Fig18
679	023-30060-002	*Spacer; Stage Glass 3; Scanner	2	15	Fig18
680	023-30061-203	*Reinforce Plate G; Scanner	1	3	Fig18
681	023-30062-005	*Adjuster 1; Scanner	1	19	Fig19
682	023-30063-109	*Adjuster 2; Scanner	1	16	Fig19
683	023-30064-008	*Seal; Original Paper Side	1	2	Fig18
684	023-30065-004	*Adjuster; Stage Glass	1	4	Fig18
685	023-30066-000	*Spacer; Cable; Scanner	1	10	Fig18
686	023-30067-007	*Spacer 1; Stage Glass	4	14	Fig18
687	023-30068-003	*Spacer 2; Stage Glass	1	13	Fig18
688	023-30069-000	*Shading Sheet; Scanner	1	21	Fig18
689	023-30070-008	*Stage Cover Hinge Ass'Y 3	2	2	Fig31
690	023-30071-004	*Bracket; Stage cover closing sensor	1	25	Fig18
691	023-30073-007	*Actuator 2; Scanner	1	27	Fig18
692	023-30074-100	*Holding Plate; Adj. Cam; Image Scanner	1	20	Fig19
693	023-30075-000	*Stage Pad 2; Stage Cover	1	6	Fig31
694	023-30076-006	*Wire Harness; Scanner HP Sensor	1	8	Fig18
695	023-30077-100	*Sheet ; Stage Glass	2	17	Fig18
696	023-30078-009	*Sheet ; Stage Glass 2	1	16	Fig18
697	023-34004-107	Front Cover	1	7	Fig32
698	023-34005-200	Front Door	1	1	Fig32
699	023-34006-002	Hinge Top; Front Door	1	12	Fig32
700	023-34007-009	Hinge Bottom; Front Door	1	13	Fig32
701	023-34015-001	Cover; Master Loading	1	11	Fig32
702	023-34020-307	Rear Cover	1	22	Fig32
703	023-34021-001	Side Cover; Drive Side	2	19	Fig32
704	023-34024-108	Bracket Lower; Rear Cover	2	23	Fig32
705	023-34025-007	Bracket Left; Scanner Rear Cover	1	24	Fig32
706	023-34026-003	Bracket Right; Scanner Rear Cover	1	25	Fig32
707	023-34030-000	Side Cover; Paper Ejection Side	1	15	Fig32
708	023-34032-100	Side Cover; Paper Feeding Side	1	17	Fig32
709	023-34040-103	Cover; Scanner; Paper Feeding Side	1	18	Fig32
710	023-34041-100	Cover; Scanner; P.-Rcv. Side	1	16	Fig32
711	023-34042-106	Rear Cover; Scanner	1	20	Fig32
712	023-34043-005	Cover; Download Card	1	21	Fig32
713	023-34051-105	Bracket; Front Cover SW	1	19	Fig27
714	023-34053-205	Bracket; Sensor; Front Cover	1	21	Fig27
715	023-34054-007	Seal; Magnet Adjuster	1	26	Fig32
716	023-34068-008	Emblem : RZ220UI	1	2	Fig32
717	023-34069-004	Emblem : RZ230AW	1	2	Fig32
718	023-34070-002	Emblem : RZ230AN	1	2	Fig32
719	023-34071-009	Emblem : RZ230EP	1	2	Fig32
720	023-34072-005	Emblem : RZ230UP	1	2	Fig32
721	023-34073-001	Emblem : RZ230C	1	2	Fig32
722	023-34074-008	Emblem : RZ200AW	1	2	Fig32
723	023-34075-004	Emblem : RZ200EP	1	2	Fig32
724	023-34076-078	Emblem : RZ220AS	1	2	Fig32
725	023-37002-105	*Frame; Panel	1	1	Fig27
726	023-37011-104	*Protection Shield	1	15	Fig27
727	023-37013-000	*Cover; Sub-Panel	1	6	Fig27
728	023-37014-006	Panel Cover; Bottom	1	14	Fig32

INDEX

No.	Part No.	Part Name	Q'ty	Remark	
729	023-37021-100	*Lpnl-Ctl PCB	1	16	Fig27
730	023-37022-106	*Main-SW-PCB	1	17	Fig27
731	023-37023-102	*Sub-SW-PCB	1	18	Fig27
732	023-37032-004	*Start Key; Pic.	1	12	Fig27
733	023-37037-006	*Stop Key; Pic.	1	9	Fig27
734	023-37040-007	*Numeric Key	1	13	Fig27
735	023-37042-000	*Test Print Key; Pic.	1	11	Fig27
736	023-37047-001	*Reset Key; Pic.	1	8	Fig27
737	023-37050-100	*Print Mode Key	1	10	Fig27
738	023-37051-009	*Print Control Key; RZ3	1	14	Fig27
739	023-37056-000	*Wake-Up Key	1	7	Fig27
740	023-37061-004	*Sheet ; Panel Mode Key Pic	1	2	Fig27
741	023-37062-000	*Sheet ; Panel Mode Key Ch	1	2	Fig27
742	023-37015-002	*Sheet ; Panel Mode Key Eng	1	2	Fig27
743	023-37069-102	*Sheet ; Print Control RZ2 Eng./inch	1	3	Fig27
744	023-37070-100	*Sheet ; Print Control RZ2 Eng./mm	1	3	Fig27
745	023-37071-107	*Sheet ; Print Control RZ2 Pic/mm	1	3	Fig27
746	023-37072-103	*Sheet ; Print Control RZ2 Ch/mm	1	3	Fig27
747	023-37076-001	*Plate ; Main Panel Pic	1	4	Fig27
748	023-37077-008	*Plate ; Main Panel Ch	1	4	Fig27
749	023-37018-001	*Plate ; Main Panel Eng	1	4	Fig27
750	023-37091-000	*Sheet ; Sub Panel RZ220UI	1	5	Fig27
751	023-37092-007	*Sheet ; Sub Panel RZ230AW/AN	1	5	Fig27
752	023-37093-003	*Sheet ; Sub Panel RZ230EP/UP	1	5	Fig27
753	023-37094-000	*Sheet ; Sub Panel RZ230C	1	5	Fig27
754	023-37096-002	*Sheet ; Sub Panel RZ200EP	1	5	Fig27
755	023-37095-006	*Sheet ; Sub Panel RZ200AW	1	5	Fig27
756	023-50001-002	Hinge Upper; PCB Bracket; Ejection Side	1	13	Fig28
757	023-50002-106	Hinge Lower; PCB Bracket; Ejection Side	1	14	Fig28
758	023-50003-005	*Hinge Bracket; Upper	1	9	Fig30
759	023-50004-001	*Hinge Bracket; Lower	1	11	Fig30
760	023-50006-101	Bracket; Power Supply & Mech PCB	1	16	Fig28
761	023-50009-003	Bracket Upper; Power Supply PCB	1	15	Fig28
762	023-50013-000	Guide; Download Card	1	17	Fig28
763	023-50014-007	Washer F4.5X12X1	3	32	Fig28
764	023-50016-000	*Secure Bracket; SH3M-PCB	1	10	Fig30
765	023-50019-009	*Bracket; SH3M-PCB	1	1	Fig30
766	023-50022-000	Bracket; Counter	1	29	Fig27
767	023-50024-002	Bracket; Rf-Tag PCB	1	24	Fig27
768	023-50027-001	*Bracket; Option IF Connector	1	4	Fig30
769	023-50028-008	*Connector Cover; PC Card slot	1	6	Fig30
770	023-50029-004	*Noise Reduction Cover	1	3	Fig30
771	023-50031-009	Main Power SW Ass'Y	1	23	Fig27
772	023-50032-005	Wire Harness; Main Power SW	1	31	Fig27
773	023-50032-005	Wire Harness; Main Power SW	1	24	Fig28
774	023-50033-109	PS15-N100	1	18	Fig28
775	023-50036-108	Junction PCB; Paper Feed	1	33	Fig3
776	023-50038-100	*SH3M-PCB	1	2	Fig30
777	023-50039-000	Wire Harness; MR	1	33	Fig28
778	023-50039-000	*Wire Harness; MR	1	7	Fig30
779	023-50041-004	Spring; Drive Interlock SW	2	6	Fig28
780	023-50042-000	Shaft Bracket; Drive Interlock SW	2	5	Fig28

INDEX

No.	Part No.	Part Name	Q'ty	Remark	
781	023-50043-007	Frame; Drive Interlock SW; P.-Rcv. Side	1	11	Fig28
782	023-50044-003	Frame; Drive Interlock SW; P.-F. Side	1	4	Fig28
783	023-50051-107	Bracket P-Rcv Side; Drive Interl SW	1	12	Fig28
784	023-50052-103	Bracket Pf Side; Drive Interlock SW	1	9	Fig28
785	023-50053-002	Spring; SW Bracket; D Interl SW	2	10	Fig28
786	023-50055-005	Button; Drive Interlock SW	2	7	Fig28
787	023-50073-003	PS15-N200	1	18	Fig28
788	023-53001-100	Wire Harness; Panel	1	2	Fig29
789	023-53002-000	Wire Harness; Main Power Source	1	23	Fig28
790	023-53003-006	Wire Harness; Master Rf-Tag	1	28	Fig27
791	023-53003-006	Wire Harness; Master Rf-Tag	1	21	Fig28
792	023-53004-100	TPH Drawer Connector H; Drive	1	26	Fig20
793	023-53006-102	Wire Harness; Upper	1	3	Fig29
794	023-53007-109	Wire Harness; Lower F	1	26	Fig13
795	023-53007-109	Wire Harness; Lower F	1	45	Fig20
796	023-53007-109	Wire Harness; Lower F	1	26	Fig27
797	023-53007-109	Wire Harness; Lower F	1	9	Fig29
798	023-53009-101	Wire Harness; Lower R	1	6	Fig29
799	023-53011-106	Wire Harness; Paper Feed Rear	1	38	Fig2
800	023-53011-106	Wire Harness; Paper Feed Rear	1	34	Fig3
801	023-53011-106	Wire Harness; Paper Feed Rear	1	21	Fig5
802	023-53011-106	Wire Harness; Paper Feed Rear	1	8	Fig29
803	023-53012-200	Wire Harness; FB Upper	1	20	Fig5
804	023-53014-008	Wire Harness ; Drum Drawer	1	21	Fig13
805	023-53014-008	Wire Harness; Drum Drawer H	1	27	Fig27
806	023-53017-007	Wire Harness; FB Pulse Motor	1	35	Fig19
807	023-53018-100	Wire Harness ; FB Upper LL	1	32	Fig18
808	023-53018-100	Wire Harness ; FB Upper ; LL	1	33	Fig19
809	023-53018-100	Wire Harness; FB Upper LL	1	22	Fig28
810	023-53018-100	Wire Harness; FB Upper LL	1	5	Fig29
811	023-53021-101	Wire Harness; Paper Ejection Rear LL	1	17	Fig7
812	023-53021-101	Wire Harness; Paper Ejection Rear LL	1	20	Fig28
813	023-53021-101	Wire Harness; Paper Ejection Rear LL	1	7	Fig29
814	023-53022-000	Junction Wire Harness ; CIS	1	33	Fig18
815	023-53022-000	Junction Wire Harness ; CIS	1	4	Fig29
816	023-53023-007	Elevator Safety SW	1	9	Fig2
817	023-53023-007	Elevator Safety SW	1	12	Fig3
818	023-53024-003	*Drum Safety SW	1	17	Fig13
819	023-53025-000	Safety SW Ass'Y ; M-M,M-Rmv. Unit	1	43	Fig20
820	023-53025-000	*Safety SW Ass'Y; M-M/M-Rmv Unit	1	51	Fig26
821	023-53026-006	Drive Interlock Safety SW	2	8	Fig28
822	023-74001-046	*Motor Assy (CWRS-445PA)	1	29	Fig3
823	023-74001-046	*Motor Assy (CWRS-445PA)	1	8	Fig14
824	023-74001-046	*Motor Assy (CWRS-445PA)	1	56	Fig21
825	023-74001-046	*Motor Assy (CWRS-445PA)	1	40	Fig26
826	023-74002-050	*Suction Motor;Ccws-55PH	1	14	Fig16
827	023-74002-050	*Suction Motor;Ccws-55PH	1	27	Fig26
828	023-74003-057	Scanner Unit II (Fig18 1-24,,Fig19 1-32)	1		Fig18
829	023-74036-001	Clamp Unit(1-11)	1		Fig14
830	023-74049-006	FB Actuator Assy(5-8)	1		Fig18
831	023-75056-057	MECHA-CTL PCB; LL; SU	1	19	Fig28
832	023-75056-057	MECHA-CTL PCB; LL; SU	1	1	Fig29

INDEX

No.	Part No.	Part Name	Q'ty	Remark	
833	023-75064-050	Drum Body; B4LL	1	1	Fig10
834	023-75065-056	Drum Body; A4LL	1	1	Fig10
835	023-75066-052	Drum Body; LegalLL	1	1	Fig10
836	023-75069-051	*Clamp Cam Assy	1	1	Fig14
837	023-75071-056	*Pressure Roller Support; Front Ass'y	1	5	Fig8
838	023-75072-052	*Pressure Roller Support; Rear Ass'y	1	6	Fig8
839	023-75074-055	*TPH Assy KB4(29-41)	1		Fig21
840	023-75077-054	Air Pump Assy(17-29)	1		Fig15
841	023-75078-050	Elevator Motor Assy(21-30)	1		Fig3
842	023-75079-057	Guide Plate Assy(30-33)	1		Fig8
843	023-75080-055	Guide Roller Assy(20-28)	1		Fig8
844	023-75082-058	P.-F.-T.Unit SU(1-33)	1		Fig4
845	023-75085-057	Suction Unit(; LL 1-32)	1		Fig16
846	023-75089-052	Stripper Unit(35-52)	1		Fig8
847	023-75091-057	Squeegee Unit;B4(16-34)	1		Fig12
848	023-75092-053	Squeegee Unit;A4(16-34)	1		Fig12
849	023-75093-050	Timing Roller Assy(10-12)	1		Fig8
850	023-75094-056	Ver. Print Pos. Base Assy(1-19)	1		Fig5
851	023-75096-059	P.-Rcv.-T Unit II (1-22)	1		Fig17
852	023-75098-051	Disposal Box Unit II(1-6)	1		Fig24
853	023-75100-056	Panel Unit RZ220UI (1-18)	1		Fig27
854	023-75101-052	Panel Unit RZ200AW (1-20)	1		Fig27
855	023-75102-059	Panel Unit RZ230C (1-21)	1		Fig27
856	023-75109-053	Panel Unit RZ230EP/UP (1-22)	1		Fig27
857	023-75110-051	Panel Unit RZ200EP (1-23)	1		Fig27
858	023-75111-058	Panel Unit RZ230AW/AN (1-19)	1		Fig27
859	023-75112-054	Clamp Plate Assy(20-31)	1		Fig10
860	023-75113-050	Unit / Stage Cover(1-5)	1		Fig31
861	023-75117-056	*Write Roller Assy LL(25-27)	1		Fig22
862	023-75119-059	*Pressure Roller Ass'y; B4	1	7	Fig8
863	023-75120-057	*Pressure Roller Ass'y; A4	1	7	Fig8
864	023-75122-050	Separation Fan Assy ;LL(1-5)	1		Fig15
865	023-75123-056	Cartridge Guide Assy(6-15)	1		Fig11
866	023-75125-059	Main Gear Assy B4(8-14)	1		Fig7
867	023-75126-055	Main Gear Assy A4(8-14)	1		Fig7
868	023-75128-058	Main Motor Assy(21-24)	1		Fig7
869	023-75131-059	Master Making Unit B4LL(Fig20 1-9, Fig21-23)	1		Fig20
870	023-75132-055	Master Making Unit A4LL(Fig20 1-9, Fig21-23)	1		Fig20
871	023-75134-058	Drum Lock Assy(10-19)	1		Fig13
872	023-75136-050	Master Removal Unit II(Fig26, Fig27)	1		Fig25
873	023-75138-053	*Master Roll Holder Assy B4(52-64)	1		Fig22
874	023-75139-050	*Master Roll Holder Assy A4(52-64)	1		Fig22
875	023-75141-054	*Master Guide Assy II (31-38)	1		Fig23
876	023-75151-050	*Hinge ; Gear Assy	1	29	Fig4
877	023-75152-056	*Disc; Clamp Sensor Ass'y	1	3	Fig14
878	023-75153-052	Pressure Solenoid Assy(26-29)	1		Fig7
879	030-11358-003	*Net-C Cover;Sh3	1	5	Fig30
880	030-12114-000	*Lever; Pressure Solenoid	1	28	Fig7
881	030-12235-100	Support Plate; Main Motor	1	3	Fig7
882	030-14342-108	Support Plate B; Upper limit	1	27	Fig2
883	030-14346-006	Upper limit Adj. Screw	1	28	Fig2
884	030-14347-002	Base; Upper limit Adj. Screw	1	29	Fig2

INDEX

No.	Part No.	Part Name	Q'ty	Remark	
885	030-14458-203	Fix Plate; Load Spring	1	19	Fig8
886	030-14476-201	Load Spring	1	17	Fig8
887	030-14521-002	*Lock; Fixing Block	1	40	Fig8
888	030-15249-004	*Roller (Inner); Transfer Belt	3	6	Fig16
889	030-16108-005	Shaft Holder; Right	1	24	Fig13
890	030-16108-005	Shaft Holder; Right	1	22	Fig20
891	030-16108-005	*Shaft Holder; Right	1	1	Fig23
892	030-16109-001	Shaft Holder; Left	1	25	Fig13
893	030-16109-001	Shaft Holder; Left	1	21	Fig20
894	030-16109-001	*Shaft Holder; Left	1	2	Fig23
895	030-19205-001	*Support; Clamp Worm	1	30	Fig3
896	030-19205-001	*Support; Clamp Worm	1	7	Fig14
897	030-19205-001	*Support; Clamp Worm	1	57	Fig21
898	030-19205-001	*Support; Clamp Worm	1	39	Fig26
899	030-19242-004	*Bracket A; Compression Gear	1	9	Fig26
900	030-19243-000	*Bracket B; Compression Gear	1	10	Fig26
901	030-19408-000	*Spring; Box Cover; Disposal Box	1	5	Fig24
902	035-14303-001	*Rubber ; Pick-Up Roller	2	15	Fig2
903	435-00047-004	*Ferrite Core	1	8	Fig30
904	435-00048-000	Ferite Core ; E04FA21	1	34	Fig19
905	444-30000-001	Sensor; GP1A73A	2	31	Fig2
906	444-30002-101	Sensor GP1A75ER	1	44	Fig20
907	444-30008-002	Sensor; LG-248NI1	1	14	Fig3
908	444-30008-002	*Sensor; LG-248NI1	1	19	Fig5
909	444-30008-002	Sensor; LG-248NI1	1	16	Fig7
910	444-30008-002	Sensor ; LG-248NI1	1	21	Fig11
911	444-30008-002	*Sensor; LG-248NI1	1	19	Fig13
912	444-30008-002	*Sensor; LG-248NI1	2	10	Fig14
913	444-30008-002	*Sensor; LG-248NI1	1	7	Fig18
914	444-30008-002	*Sensor; LG-248NI1	1	28	Fig18
915	444-30008-002	*Sensor; LG-248NI1	1	50	Fig21
916	444-30008-002	*Sensor; LG-248NI1	2	48	Fig23
917	444-30008-002	*Sensor; LG-248NI1	1	28	Fig25
918	444-30008-002	*Sensor; LG-248NI1	2	47	Fig26
919	444-30010-007	Sensor; LG285D1	1	22	Fig27
920	444-33000-002	*GP2A200LCS	1	10	Fig16
921	444-33000-002	*GP2A200LCS	1	15	Fig16
922	444-33003-001	*Sensor; ON-171-A8	1	49	Fig23
923	444-33005-004	*Sensor; PS-117ND1	2	10	Fig4
924	444-33005-004	*Sensor; PS-117ND1	1	30	Fig8
925	444-39000-004	**Sensor; E-3674	1	39	Fig23
926	444-41002-103	*Sensor; OS665633-703	1	27	Fig25
927	444-42029-200	*Sensor (Send); KH0854-00	1	24	Fig22
928	444-42030-305	*Sensor (Rcv); KH0854-01	1	20	Fig21
929	444-43007-200	*Master Loading Sensor	1	25	Fig25
930	444-43008-001	*Sensor ; PS-RS03	1	24	Fig18
931	444-51003-000	Sensor; YAA81-0068N	1	5	Fig11
932	444-59002-100	RF-Tag Reader; Drum	1	16	Fig11
933	444-59003-100	RF-Tag PCB	1	25	Fig27
934	444-59006-106	*RF-Tag Reader; Master	1	46	Fig22
935	444-60001-100	*Image Scanner ;DL112-05R	1	12	Fig19
936	444-80003-001	**TPH ; KYT-256-12	1	34	Fig21

INDEX

No.	Part No.	Part Name	Q'ty	Remark	
937	488-00048-004	Power Cord; 220V EU (L)	1	31	Fig28
938	488-00050-009	Power Cord; 100V (L)	1	31	Fig28
939	488-90030-109	**Ground Wire; U3-55-R3	1	41	Fig21
940	490-22017-003	*CWTD3337G-24F-9K24E	1	21	Fgi7
941	490-31009-005	*Motor ; KH42JM2B174	1	5	Fig19
942	490-33015-002	*Motor; PM42L-048-ZVN6	1	2	Fig20
943	490-33015-002	*Motor; PM42L-048-ZVN6	1	28	Fig23
944	490-33016-009	*Motor; PM42L-048-ZVN5	1	17	Fgi5
945	490-41009-003	*Fan; D12F-24PLH1C10	1	2	Fig15
946	490-41009-003	*Fan; D12F-24PIH1C10	1	16	Fig16
947	490-50006-009	*Solenoid; Tds-10A-1056	1	27	Fgi7
948	490-50006-009	*Solenoid; Tds-10A-1056	1	11	Fig13
949	490-50006-009	Solenoid; Tds-10A-1056	1	37	Fig20
950	490-50007-005	*Solenoid; Tds-09SI-59	1	22	Fig23
951	492-00001-000	Counter	2	30	Fig27
952	550-20059-108	Seal;P.-F.-T.Down	1	3	Fig2
953	550-21173-001	Seal: P.-Feed Pressure; Pic.	1	2	Fig2
954	600-50057-006	Bearing;Flaw678 ZZA	2	19	Fig3
955	601-10195-004	Bearing; Ddlf-1910ZZR	1	16	Fig8
956	601-10228-000	*Bearing;6900ZZNR	2	28	Fig22
957	607-03001-001	*Metal;S4X7X2	1	20	Fig12
958	607-03001-001	*Metal;S4X7X2	1	20	Fig12
959	607-10003-001	Metal;F16X22/19X6;26X2	1	33	Fgi7
960	607-10003-001	Metal;F16X22/19X6;26X2	2	9	Fig8
961	607-10005-004	**Metal;F8x10x3;11.2x0.6	2	40	Fig21
962	607-10006-000	*Metal;F6X8X4;10X1	2	34	Fig22
963	607-10006-000	**Metal;F6x8x4;10x1	6	31	Fig23
964	607-13000-003	*Metal;F6X10/9X4;12X1.5	2	34	Fig26
965	607-13000-402	*Metal;F6X10/9X6:12 X 1.5	2	4	Fig16
966	607-13000-402	*Metal;F6X10/9X6:12 X 1.5	2	48	Fig21
967	607-13006-001	*Metal;F6X10X4;12X1.5	2	18	Fig25
968	607-15000-000	Metal; f8X13/12X5;16X2	1	34	Fig2
969	607-15000-000	Metal; f8X13/12X5;16X2	1	20	Fig3
970	607-15000-000	Metal; f8X13/12X5;16X2	1	32	Fgi7
971	607-15000-000	Metal; f8X13/12X5;16X2	2	11	Fig15
972	607-15000-000	*Metal; f8X13/12X5;16X2	2	22	Fig26
973	607-15000-400	*Metal; F8X12/11X10: 15X2	2	17	Fig26
974	607-15001-503	Metal; F8X12/10.8X14; 16X2	1	37	Fig2
975	607-15005-002	*Metal; F8X10X8; 12X1.5	2	17	Fig23
976	607-15006-009	*Metal;F8×16×5;18×1.1	2	1	Fig19
977	607-15007-005	*Metal;F8X12X7;16X1.5	2	43	Fig21
978	607-16001-000	Metal;F10X15/14X6;18X2	3	13	Fig2
979	607-16001-000	Metal;F10X15/14X6;18X2	2	13	Fig8
980	607-16001-000	*Metal;F10X15/14X6;18X2	2	7	Fig26
981	607-16004-000	*Metal;F10X14*6;18X2	2	28	Fig21
982	607-40001-003	*Metal;F8X11/10X5.5;14X2	1	23	Fig8
983	610-00022-003	**Damper; 2G50-C-10HG	1	62	Fig22
984	610-00022-003	*Damper; 2G50-C-10HG	1	23	Fig23
985	610-10009-005	*One-Way Hinge; OWNF6-1NRS	1	28	Fig4
986	611-00007-001	*Pulley; P20+P90-S1.5M	1	2	Fig19
987	611-00009-004	*Pulley; P75-S1.5M-6	1	30	Fig19
988	611-01900-001	*Pulley;D19×D5	2	27	Fig19

INDEX

No.	Part No.	Part Name	Q'ty	Remark	
989	611-90002-003	*Pulley;P40S2M60	1	7	Fig16
990	611-90006-009	Pulley; P18-5GT-12	1	7	Fgi7
991	611-90007-005	*Pulley; P42-5Gt	1	12	Fgi7
992	611-90008-001	*Pulley; P42-5GT-13	1	24	Fgi7
993	611-90010-006	*Pulley Ass'Y; P40-2Gt-5	1	4	Fig20
994	611-90012-009	*Pulley; P70-2Gt-5	1	30	Fig22
995	612-02101-100	*Gear; M1X15X12	1	12	Fig8
996	612-03106-008	*Gear;M1X80X10	1	18	Fig15
997	612-10001-009	*Gear;M1.25X22	1	21	Fig25
998	612-10002-005	*Gear;M1.25X12	1	22	Fig25
999	612-10003-001	*Gear;M1.25X9	1	23	Fig25
1000	612-10004-008	*Gear;M1.25X12X7	2	18	Fig26
1001	612-10005-004	*Gear;M0.8X54	1	31	Fig26
1002	612-10006-000	*Gear;M0.8X60+M0.8X16	1	30	Fig26
1003	612-10009-107	*Gear; M1X24	1	24	Fig3
1004	612-10010-008	*Gear;M1X20X6	1	46	Fig21
1005	612-10013-007	*Gear;M0.8X36X10	1	15	Fgi5
1006	612-10014-003	*Gear; M1X126X7.5	1	10	Fgi5
1007	612-10016-006	*Gear; M1X140X8	1	5	Fgi5
1008	612-10017-002	*Gear;M1X80X10	1	23	Fgi7
1009	612-10018-009	*Gear; M0.8X25	1	33	Fig26
1010	612-10019-005	*Gear; M1.25X16X4.5	1	36	Fig26
1011	612-10020-003	*Gear; M1.25X16X8.5	1	37	Fig26
1012	612-10021-107	Gear;M0.8X33X7.4	1	12	Fig2
1013	612-10023-002	*Gear;M1X50X6	1	9	Fig4
1014	612-10024-009	*Gear; M1x25x7 OWC	1	29	Fig12
1015	612-10024-009	*Gear; M1x25x7 OWC	1	29	Fig12
1016	612-10026-001	Gear;M1X45X6	1	8	Fig12
1017	612-10027-008	*Gear;M0.8X19X4	1	25	Fig12
1018	612-10027-008	*Gear;M0.8X19X4	1	25	Fig12
1019	612-10028-004	*Gear;M0.8X43X3	1	26	Fig12
1020	612-10028-004	*Gear;M0.8X43X3	1	26	Fig12
1021	612-10103-006	*Gear;M0.8X13X5	1	9	Fig23
1022	612-10104-002	*Gear;M0.8X16X5	1	18	Fig23
1023	612-10105-009	*Gear;M0.8X16X4	1	26	Fig23
1024	612-10106-005	*Gear;M0.8X34X4	1	25	Fig23
1025	612-11103-000	*Gear; M0.8X15X7	1	45	Fig26
1026	612-11300-107	Gear;M0.8X34X8.5	2	19	Fig2
1027	612-11304-005	*Gear; M0.8X37+M1X15	1	5	Fig14
1028	612-12208-107	Gear; M1X28X8	1	15	Fgi6
1029	612-12306-001	Gear ; M1x32x4	1	18	Fig11
1030	612-12315-000	*Gear; M1X31X6	1	2	Fig14
1031	612-12701-008	*Gear; M1X71X14	1	8	Fig26
1032	612-80006-008	*Gear;M0.8X25+M0.8X14	1	52	Fig21
1033	612-80007-004	*Gear;M0.8X25+M1X14	1	54	Fig21
1034	612-80008-000	*Gear; M0.8X20+M0.8X14	1	55	Fig21
1035	612-80011-001	*Gear; M0.8X30+M0.8X14	1	25	Fig3
1036	612-80012-008	*Gear; M0.8X30+M0.8X14	1	26	Fig3
1037	612-80013-004	*Gear; M0.8X29+M1X14	1	27	Fig3
1038	612-80017-000	*Gear;M1X42+M1X28	1	7	Fgi5
1039	612-80018-006	*Gear;M0.8X36+M0.8X18	2	30	Fig23
1040	612-80019-002	*Gear;Mx0.5X89+M0.8X34	1	29	Fig23

INDEX

No.	Part No.	Part Name	Q'ty	Remark	
1041	612-81303-006	*Gear; M0.8X35+M0.8X15	1	16	Fgi5
1042	612-81303-006	*Gear; M0.8X35+M0.8X15	1	6	Fig14
1043	612-81303-006	*Gear; M0.8X35+M0.8X15	1	41	Fig26
1044	612-81401-008	*Gear; M0.8X17+M0.8X49	1	44	Fig26
1045	612-81602-003	*Gear; M1X17+M0.8X61	1	43	Fig26
1046	612-82407-000	Gear;M1X41+M1X29	1	14	Fgi6
1047	613-10002-002	*Gear Pulley; M0.5X130+17-2	1	3	Fig20
1048	613-11300-007	*Pulley Gear; 0.8X31+53S2M	1	28	Fig26
1049	620-00010-001	Belt; 645-5GT-10	1	25	Fgi7
1050	620-01686-009	*Belt; 168-1.5M-6	1	31	Fig19
1051	620-02616-004	*Belt; 261-1.5M-6	1	32	Fig19
1052	620-80002-004	*Belt; 230-2GT-4	1	5	Fig20
1053	621-00001-000	*Belt; 40-S2M-290	1	29	Fig26
1054	621-00003-002	*Belt; 40-S2M-138	1	8	Fig16
1055	628-21401-009	*Transfer Belt 2; 2X140	3	15	Fig25
1056	629-00002-004	*Flat Belt; 15X0.65X519	3	3	Fig16
1057	635-10002-000	*Stepped Screw;F4X4.5;M3X4	2	65	Fig21
1058	635-10004-002	Stepped Screw;F5X5;M3X3	4	24	Fig20
1059	635-10005-009	**Stepped Screw;F6x7.2;M3x4	1	33	Fig21
1060	635-10006-005	*Stepped Screw;F5X10.8;M3X3	2	15	Fig26
1061	635-10008-008	*Stepped Screw;F6X5;M3X5	1	31	Fig10
1062	635-10009-004	Stepped Screw;F5X26;M3X4	2	17	Fgi9
1063	635-17332-005	*Stepped Screw;;F3x2.7;M2x3	2	15	Fig19
1064	635-17423-000	Stepped Screw; F4x2.2;M3x4	2	1	Fgi6
1065	635-17423-000	*Stepped Screw;F4X2.2;M3X4	2	11	Fig22
1066	635-17433-006	Step Screw	2	12	Fig12
1067	635-17523-005	Stepped Screw;Dia.5X2;M3X3	4	11	Fgi9
1068	635-17613-004	*Stepped Screw;6X1.8;M3X4	2	31	Fig4
1069	635-17613-004	*Stepped Screw;6X1.8;M3X4	2	8	Fig8
1070	635-17613-101	*Step Screw; D6X1.5; M3X4.5	1	49	Fig22
1071	635-17614-108	Stepped Screw;6X1.7;M4X4	1	14	Fig15
1072	635-17624-006	*Stepped Screw;6X2.2;M4X2.5	1	50	Fig8
1073	635-17634-001	Stepped Screw;F6X3;M4X4	2	6	Fig12
1074	635-17713-009	*Stepped Screw ; F7x1;M3x3.2	1	11	Fig18
1075	635-17814-000	Stepped Screw; 8X1.7;M4X4.3	1	6	Fgi7
1076	635-17824-005	Stepped Screw;F8X2.3;M4X4.4	4	5	Fig2
1077	635-18513-003	*Stepped Screw;F5X1.5;M3X3	1	50	Fig26
1078	639-00605-104	Washer ; 6.2x9.5x0.5	4	38	Fig4
1079	639-00610-000	P Washer; 6X13.5X1	1	15	Fig8
1080	639-00815-001	*Washer ; 8x16x1.5	1	34	Fig12
1081	639-00815-001	*Washer ; 8x16x1.5	1	34	Fig12
1082	640-60040-000	*O Ring;P4-1.9	1	21	Fig12
1083	640-60040-000	*O Ring;P4-1.9	1	21	Fig12
1084	640-60100-100	O Ring ; P10-2.4	1	3	Fig11
1085	640-67340-009	*O Ring;34-3.6	1	25	Fig15
1086	660-01000-013	Rubber Foot; K-40	4	14	Fgi1
1087	660-05000-018	Magnet Catch;SM-50P	1	34	Fig4
1088	660-05000-018	*Magnet Catch;SM-50P	1	22	Fig17
1089	660-05000-018	Magnet Catch;SM-50P	1	20	Fig27
1090	660-05105-006	Door Catch	1	5	Fig32
1091	660-05106-002	Cover Catch	1	4	Fig32
1092	665-01212-009	Reuse Band ; RSG-130	3	32	Fig25

INDEX

No.	Part No.	Part Name	Q'ty	Remark	
1093	665-02021-606	Clip; NK-7N Nikko Nylon Clp	1	31	Fig15
1094	665-02039-009	Edging Saddle;ESD-17L	1	29	Fgi1
1095	665-02039-009	Edging Saddle;ESD-17L	3	25	Fig28
1096	665-02043-006	Wire Saddle;LWS-1316	6	28	Fgi1
1097	665-02043-006	*Wire Saddle;LWS-1316	2	67	Fig21
1098	665-02043-006	Wire Saddle;LWS-1316	17	27	Fig28
1099	665-02044-002	Wire Saddle;LWS-0711	1	36	Fig12
1100	665-02044-002	Wire Saddle;LWS-0711	1	46	Fig20
1101	665-02044-002	*Wire Saddle;LWS-0711	2	66	Fig22
1102	665-02044-002	*Wire Saddle LWS-0711	2	51	Fig23
1103	665-02044-002	Wire Saddle;LWS-0711	6	32	Fig27
1104	665-02055-004	Wire Saddle; LWS-2218	8	26	Fig28
1105	665-02901-002	Power Band T10	2	7	Fig15
1106	665-04002-005	Square Bushing	1	33	Fig27
1107	665-04002-005	Square Bushing	1	29	Fig28
1108	665-04054-005	Square Bushing;Sb-2718	2	30	Fig28
1109	665-04055-001	SB-6025	2	30	Fig18
1110	665-04055-001	SB-6025	1	34	Fig27
1111	665-04055-001	SB-6025	1	28	Fig28
1112	S-4340	Risorinc3N(1-11)	1		Fig30
1113		Side Frame L Front	1	1	Fgi1
1114		Side Frame L Rear :Assy	1	2	Fgi1
1115		*Front Frame; M.-M Unit A'Ssy	1	2	Fig22
1116		Pin	1	19	Fig11
1117		Ink Motor Ass'y	1	20	Fig11
1118		Main Frame ; Drum	1	1	Fig12
1119		*Washer; D6	2	29	Fig25



Painting cell : It has been revised from Version Apr, 2004.